A Summary of Research Catch and Effort Data for Nearshore Reef-Fishes Collected during 1984 in MSA 15 and 16 of the Strait of Georgia

L. J. Richards, A. J. Cass, J. R. Selsby,
R. van den Broek, and S. D. Loynachan

Department of Fisheries and Oceans
Fisheries Research Branch
Pacific Biological Station
Nanaimo, British Columbia V9R 5K6

June 1985

Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1833

85-5883/

Canadian Manuscript Report of Fisheries and Aquatic Sciences

These reports contain scientific and technical information that represents an important contribution to existing knowledge but which for some reason may not be appropriate for primary scientific (i.e. *Journal*) publication. They differ from Technical Reports in terms of subject scope and potential audience: Manuscript Reports deal primarily with national or regional problems and distribution is generally restricted to institutions or individuals located in particular regions of Canada. No restriction is placed on subject matter and the series reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries management, technology and development, ocean sciences, and aquatic environments relevant to Canada.

Manuscript Reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report will be abstracted by *Aquatic Sciences and Fisheries Abstracts* and will be indexed annually in the Department's index to scientific and technical publications.

Numbers 1-900 in this series were issued as Manuscript Reports (Biological Series) of the Biological Board of Canada, and subsequent to 1937 when the name of the Board was changed by Act of Parliament, as Manuscript Reports (Biological Series) of the Fisheries Research Board of Canada. Numbers 901-1425 were issued as Manuscript Reports of the Fisheries Research Board of Canada. Numbers 1426-1550 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Manuscript Reports. The current series name was changed with report number 1551.

Details on the availability of Manuscript Reports in hard copy may be obtained from the issuing establishment indicated on the front cover.

Rapport manuscrit canadien des sciences halieutiques et aquatiques

Ces rapports contiennent des renseignements scientifiques et techniques qui constituent une contribution importante aux connaissances actuelles mais qui, pour une raison ou pour une autre, ne semblent pas appropriés pour la publication dans un journal scientifique. Ils se distinguent des Rapports techniques par la portée du sujet et le lecteur visé; en effet, ils s'attachent principalement à des problèmes d'ordre national ou régional et la distribution en est généralement limitée aux organismes et aux personnes de régions particulières du Canada. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du Ministère des Pêches et des Océans, notamment gestion des pêches; techniques et développement, sciences océaniques et environnements aquatiques, au Canada.

Les Manuscrits peuvent être considérés comme des publications complètes. Le titre exact paraît au haut du résumé de chaque rapport, qui sera publié dans la revue *Aquatic Sciences and Fisheries Abstracts* et qui figuera dans l'index annuel des publications scientifiques et techniques du Ministère.

Les numéros de 1 à 900 de cette série ont été publiés à titre de manuscrits (Série biologique) de l'Office de biologie du Canada, et après le changement de la désignation de cet organisme par décret du Parlement, en 1937, ont été classés en tant que manuscrits (Série biologique) de l'Office des recherches sur les pêcheries du Canada. Les numéros allant de 901 à 1425 ont été publiés à titre de manuscrits de l'Office des recherches sur les pêcheries du Canada. Les numéros 1426 à 1550 ont été publiés à titre de Rapport manuscrits du Service des pêches et de la mer, Ministère des Pêches et de l'Environnement. Le nom de la série a été changé à partir du rapport numéro 1551.

La page couverture porte le nom de l'établissement auteur où l'on peut se procurer les rapports sous couverture cartonnée.

Canadian Manuscript Report of
Fisheries and Aquatic Sciences No. 1833

June 1985

A SUMMARY OF RESEARCH CATCH AND EFFORT DATA FOR NEARSHORE REEF-FISHES COLLECTED DURING 1984 IN MSA 15 AND 16 OF THE STRAIT OF GEORGIA

by

L. J. Richards, A. J. Cass, J. R. Selsby,
R. van den Broek, and S. D. Loynachan

Department of Fisheries and Oceans
Fisheries Research Branch
Pacific Biological Station
Nanaimo, British Columbia V9R 5K6

(c) Minister of Supply and Services Canada 1985

Cat. No. Fs 97-4/1833E ISSN 0706-6473

Correct citation for this publication:

Richards, L. J., A. J. Cass, J. R. Selsby, R. van den Broek, and S. D. Loynachan. 1985. A summary of research catch and effort for nearshore reef-fishes collected during 1984 in MSA 15 and 16 of the Strait of Georgia. Can. MS Rep. Fish. Aquat. Sci. 1833: 69 p.

ABSTRACT

Richards, L. J., A. J. Cass, J. R. Selsby, R. van den Broek, and S. D. Loynachan. 1985. A summary of research catch and effort data for nearshore reef-fishes collected during 1984 in MSA 15 and 16 of the Strait of Georgia. Can. MS Rep. Fish. Aquat. Sci. 1833: 69 p.

In 1984 we began a research fishing program based on the need for stock assessments of nearshore reef-fishes in the Strait of Georgia. Five cruises were completed in MSA 15 and 16 during the 1984 field season. A stratified random design was used to choose fishing sites within these statistical areas. Three depth strata (<40 m, 40-70 m, and 70-100 m) were fished at most sites. Fishing during the first cruise was conducted by automated jig. Standard angling gear (trolling rod and reel) was used on the remaining cruises. Dogfish, copper rockfish, quillback rockfish, yelloweye rockfish and lingcod were the dominant species in the catch. Species composition varied with the depth, statistical area and vessel used for fishing. CPUE was consistently higher with the use of bait herring than with a stingsilda, when both methods were performed concurrently. Herring CPUE varied significantly with sea surface conditions and time of day. Depth and tidal phase had no significant effect. Raw data on catch, effort and associated set information and a description of a standardized methodology are presented in this report.

Key words: quillback rockfish, lingcod, recreational fishery, CPUE, angling

RÉSUMÉ

Richards, L. J., A. J. Cass, J. R. Selshy, R. van den Broek, and S. D. Loynachan. 1985. A summary of research catch and effort data for nearshore reef-fishes collected during 1984 in MSA 15 and 16 of the Strait of Georgia. Can. MS Rep. Fish. Aquat. Sci. 1833: 69 p.

En 1984, les auteurs ont entrepris un programme de pêche expérimentale visant à satisfaire au besoin d'évaluer les stocks de poissons peuplant les récifs côtiers du détroit de Géorgie. Dans les zones statistiques mineures (MSA) 15 et 16, cinq expéditions ont été menées en 1984 aux cours de la saison de recherche. On a utilisé un modèle à stratification aléatoire pour choisir les lieux de pêche à l'intérieur de ces zones statistiques, dont la plupart ont été échantillonnées à trois strates de profondeur (40 m, 40-70 m, 70-100 m). Au cours de la première expédition, la pêche a été réalisée à l'aide d'une turlutte automatique tandis que des engins de pêche à la ligne ordinaires (canne avec cuillère et moulinet) étaient utilisés pendant les autres expéditions. L'aiguillat, le sébaste cuivré, le sébaste à dos épineux, le sébaste aux yeux jaunes et la morue-lingue constituaient les principales espèces capturées. La composition par espèce variait selon la profondeur, la zone statistique et le navire utilisé pour la pêche. Les PPUE étaient uniformément plus élevées quand du hareng au lieu de stingsilda, était utilisé comme appât et que les deux méthodes étaient utilisées ensemble. Les PPUE de hareng variaient nettement en fonction des conditions de la mer en surface et le moment de la journée; par contre, la profondeur et la marée n'avait aucun effet important. Les données brutes sur les prises, l'effort et les séries correspondantes d'information ainsi qu'une description des méthodes normalisées sont présentées.

Most-clés: sébaste à épineux, morue-lingue, pêche sportive, PPUE, pêche à la ligne

INTRODUCTION

This report summarizes research catch and effort data on nearshore reef-fishes collected during 1984 as part of a stock assessment program for these fishes. The objective of the 1984 work was to develop standardized fishing techniques for nearshore reef-fishes, and to obtain preliminary data on catch and effort. We also tested the effects of fishing technique, bait type and environmental factors on CPUE. These results will be published elsewhere. The purpose of this report is to archive both the preliminary raw data and the process of development of a standardized technique.

There were five cruises in the Strait of Georgia in MSA 15 and 16 during the 1984 field season: (1) 4 - 10 July on M/V KETA, a 12-m research seiner, (2) 24 July - 2 August on CABEZON, a 7-m herring skiff, (3) 14 - 25 August on M/V KETA, (4) 2 - 8 October on CABEZON, based on PANDORA II, and (5) 20 - 21 November on a 3-m whaler, based on PANDORA II.

On cruise 1, the primary fishing method was automated jig, although casting and jigging with angling gear were attempted. Only jigging with angling gear was used on the remaining cruises. Standardized jigging techniques were developed prior to cruise 3 and data from this cruise are probably the most representative. Poor weather conditions limited effort during cruises 4 and 5.

METHODS

SITE SELECTION PROCEDURES

MSA 15 and 16 were chosen for this work for several reasons. First, there was a wide range of types of habitats available. Second, CPUE for the recreational fishery was reported to be high for rockfish (Shardlow and Hoyt unpub. data), so that adequate sample sizes could be obtained. Third, fishing effort varied between areas. It had been relatively low for MSA 15 and high for MSA 16 for rockfish and lingcod in the recreational and commercial fisheries. Fourth, a lingcod tagging program was in progress in MSA 16 (Cass et al. 1984b). Finally, currents were not too strong for SCUBA or PISCES survey work.

Once the statistical areas had been identified, contact was made with the local fishery officers at Westview and at Madeira Park. They indicated important recreational salmon fishing and jigging sites, important regions for the commercial rockfish and lingcod fisheries, and marine mammal haul-outs. This information was incorporated into a stratified-random sampling design in order to maximize contrast in historical fishing effort and to reduce variance in the data.

MSA 15 and 16 as defined by the creel census program (omitting unlabelled sub-areas) were divided into blocks, 1 min latitude by 1 min longitude. Blocks that included fishable areas were numbered. Fishable areas were defined to include a section of shoreline or a reef. Blocks with only sand or mud substrates were excluded. Blocks were also labelled by habitat type, estimated by depth contours on a chart, as predominantly steep wall, rocky slope or reef. Hence the complete sampling design was stratified by fishing effort (high and low) and by habitat type (wall, slope or reef) within effort within each statistical area.

Block numbers were drawn from a uniform random distribution and assigned to strata. For MSA 16, four sites were drawn for each habitat and effort combination. For MSA 15, three sites were drawn for each combination. The first sites drawn were also assigned as SCUBA or PISCES sites, unless the site was unsuitable for safety reasons. Site co-ordinates are given in Table 1 and are illustrated in Figure 1.

In practice, there were a few alterations to this initial design. The distinction between strata was not clear-cut and several sites had been mis-classified. Other sites had to be excluded because of difficulty of access, the presence of strong currents, or the lack of suitable terrain. Sites were excluded after cruise 1 by grouping sites with similar characteristics and arbitrarily eliminating sites from each group. No SCUBA or PISCES sites were excluded.

FISHING TECHNIQUES

Sampling was further stratified by depth within each site. Depth strata were defined as <40 m, 40-70 m, and 70-100 m. Most recreational rockfish fishing is restricted to the first two depth strata, but commercial rockfish fishing does occur in the deep stratum.

The exact location of fishing within a site block was arbitrary. Upon arrival at a site we used an echo sounder (when available) to locate rocky terrain and began to fish. Prior to cruise 3, the following rules had been developed for fishing in a depth stratum:

1. If no fish are caught in the first 5 to 10 min, then move to a new location within the site, otherwise remain at the location.
2. If the CPUE drops, such that no fish were caught in the previous 10 min, then move to a new location.
3. If the catch is predominantly dogfish, then move to a new location.
4. If ten fish of one species are caught, then move to a new location to avoid over-exploitation of a local area.

These rules were not followed strictly if the boat was drifting with currents (and hence covering a greater area).

We attempted to divide our effort among the depth strata available at a site, such that approximately one hour of fishing time was spent at each depth stratum for each day that fishing was scheduled for that site. Fishing time was defined as the time that the lines were in the water and did not include time spent moving between locations. The order of fishing depth strata was arbitrary. Generally, two sites were fished on a given day and repeat visits to a site occurred on different cruises. The exception was cruise 2, when we were restricted by SCUBA survey work to a smaller geographic area.

On cruise 1, fishing was performed with two BJ-5 automatic jigging machines. The machines were usually rigged with three lures, attached by snaps and swivels to a weighted line. The machines were adjusted so that they would let out line until the weight hit bottom, and then jig up and down within 2 m of the bottom. At approximately 5-min intervals, the line was hauled in and any fish caught were removed. Lures were changed regularly to test the effectiveness of a range of types and colors.

Angling gear (rod and reel) was carried as a back-up on cruise 1. We used both trolling and casting reels and fished by jigging or by casting to within a few meters of the surface. We tried a variety of lure types. Beginning with cruise 2, all fishing was conducted by jigging with trolling rods and reels. Lure types were restricted to a stingsilda and fresh or fresh-frozen herring. The angling gear for these first two cruises was not of good quality and we could only cover the <40 m stratum.

Prior to cruise 3, we had obtained quality trolling rods and reels. We were able to fish all depth strata with this gear. We had also developed a standardized technique. There were two fishing methods tested - stingsilda and frozen herring. For herring we used two single sharpened hooks (Mustad #92553, size 30, stainless steel) with a 5 cm spacing between hooks. The line was 9 kg test monofilament with a 7 kg test leader. Mooching weights were added, depending on depth and current. Bait size varied, depending on availability, although we used approximately 12 cm fish when possible.

As an alternative fishing method we used a 75-g black and silver stingsilda with a C bend and a single sharpened hook. On previous trips a lighter stingsilda had been used without the bend. The jigging action with the stingsilda consisted of 3 or 4 short strokes of 30-40 cm followed by one long stroke, with the lure placed at a minimum distance of 1 m from the bottom.

These techniques were used in all subsequent work and resulted in improved catch and retention rates compared with cruise 2. Generally, if three people were fishing, then one would use a stingsilda and the other two people would use herring. Fishing method was periodically rotated among personnel. Only herring was used on cruise 5.

DATA RECORDING METHODS

Data that were recorded for each set included date, site number, start time, fishing time (duration), start or minimum depth, finish or maximum depth, median depth, anchor position, weather and tide information, sounder interpretation, lure type, catch information and general remarks. A new set was begun if weather conditions changed, over one hour had been spent at a location, or if the space for recording catch had been filled.

Sites were identified by a six-digit code that included statistical area and location number. The median depth was used to define the depth stratum as strata boundaries were sometimes crossed during fishing. Most fishing occurred with the anchor up although the anchor had to be set if the current was strong. Sun conditions were coded as bright, overcast and intermediate or mixed. For cruise 1 and 2, tide was coded as flood, slack or ebb. Beginning with cruise 3, tide was coded as the time from low slack, calculated from tide tables, and on a scale of -5 (one hour after high slack) through 0 (low slack) to +6 (high slack). Codes for sea conditions, sounder information, general remarks, and lure type are described in Table 2. Rockfish maturity codes are described in Table 3. Rockfish maturity data are preliminary however, as we could not reliably determine maturity at this time of year, and we had not followed these species over an annual cycle.

A catch was recorded if the fish was brought to at least a depth at which it could be visually identified. Hence, "bites" or "nibbles" were not recorded if the fish was not held on the hook. All landed rockfish and most lingcod were measured for fork length, sex and maturity. The maturity stages recorded for lingcod are from Cass et al. (1984a). Otoliths were collected from all rockfish and fin rays were collected from most lingcod.

Temperature and salinity were recorded on cruises 4 and 5 by a CTD-12 attached to the submersible Pisces. These data are presented in Richards and Cass (1985).

RESULTS AND DISCUSSION

RAW DATA

Data from cruise 1 are presented in Tables 4 to 6. The first table of each pair includes general information for each set. Catch is listed by lure type in the second table of each pair. Hook position, numbered beginning at the bottom, is included for the automated jig data (Table 4b). For these data, duration is the time that each hook was in the water. For all other tables, duration has been multiplied by number of lines in the water and represents total effort for that fishing method for that set. Data from

cruise 2 are presented in Table 7, data from cruise 3 are presented in Table 8 and data from cruises 4 and 5 are combined in Table 9. Data on individual fish are presented in Table 10.

VARIATION IN CPUE

To summarize catch and effort data, information was first discarded from any set with a total fishing time of less than 10 min. Fishing time and number of fish caught were then summed within a fishing method for a given cruise, site, and depth (Table 11). CPUE ranged from 0 to 3.2 fish h^{-1} by automated jig, 0 to 9.6 fish h^{-1} by stingsilda and 0 to 9.0 fish h^{-1} by herring. The comparatively low success rate by automated jig can partially be accounted for by problems with rigging. We were unable to properly adjust the machines settings during the cruise.

To test the relative effectiveness of herring against stingsilda, we compared CPUE from Table 11 for the cruises, sites and depths when both types were used. Herring CPUE was greater than stingsilda CPUE for 75% (n=53) of the combinations with different values for CPUE ($p<0.001$, Sign test). Stingsilda CPUE may have been higher in some cases because more time was spent with the lure actually in the water. With herring, it was necessary to check the bait periodically. This procedure reduced fishing time and bait loss was occasionally a problem.

There are many factors that could account for variation in CPUE data. We tested for the effects of depth, sea surface conditions, sun conditions, time of day, and tidal phase with Kruskal-Wallis tests on herring data. The CPUE used in these tests was calculated from rockfish and lingcod catches only, so that the effect of dogfish was excluded. CPUE was not related to depth (Fig. 2a), a result that was counter-intuitive. It took longer to set and retreive the lines at deeper depths and this time difference was not subtracted from total fishing time. If CPUE had been higher, this factor may have become more apparent.

CPUE decreased significantly as sea surface conditions became less favourable for fishing (Fig. 2b). This factor may account for the low CPUE during cruises 4 and 5 as weather was a problem at these times. Sun conditions also had a significant effect on CPUE (Fig. 2c). CPUE was highest in bright sunlight and lowest in mixed cloud and sun.

Time of day had a significant effect on CPUE (Fig. 2d), with CPUE highest in the early morning and late afternoon. This pattern was only apparent in the <40 m depth stratum however, and sample sizes for times other than early morning were small for the other depth strata. We also tested for the effect of tidal phase but none of the combinations were significant.

We suspected that the vessel used for fishing affected CPUE, but unfortunately we could not test this hypothesis directly with the data. On

cruise 3 the highest herring CPUE for the <40 m depth stratum occurred at sites 15-88 and 15-103. These were the sites at which a small inflatable was used instead of the KETA. The lack of manoeuvrability of the KETA, combined with engine noise, may have had a negative effect on CPUE.

SPECIES COMPOSITION

Dogfish Squalus acanthias, copper rockfish Sebastes caurinus, quillback rockfish S. maliger, yelloweye rockfish S. ruberrimus and lingcod Ophiodon elongatus were the dominant species in the catch (Table 12). Other less abundant rockfish in the catch were silvergrey rockfish S. brevispinus, greenstriped rockfish S. elongatus, and tiger rockfish S. nigrocinctus. Incidental species included one ratfish Hydrolagus colliei, one chinook salmon Oncorhynchus tshawytscha, kelp greenling Hexagrammos decagrammus, one butter sole Isopsetta isolepis and rock sole Lepidopsetta bilineata. Catches of copper rockfish, tiger rockfish, and kelp greenling were confined to the <40 m depth stratum. Silvergrey rockfish and greenstriped rockfish were only caught deeper than 40 m.

The effects of lure type, depth and statistical area on species composition were tested by Chi-square, combining data from cruises 2 to 5. Species caught in low numbers were excluded from these tests. Lure type (herring or stingsilda) did not have a significant effect on species composition in the <40 m depth stratum (Table 13). Sample size was too low to test for this effect on the other depth strata. Data were combined across lure types for the remaining tests.

Species composition varied significantly with depth (Table 14). Copper rockfish were caught in the <40 m stratum only, and lingcod catch decreased with depth. Conversely, the catch of yelloweye rockfish increased with depth. The remaining tests were performed separately for data from each depth.

The effect of statistical area was significant for the <40 m stratum, and the 70-100 m stratum, but not for the 40-70 m stratum (Table 15). More copper rockfish and lingcod were caught in statistical area 16 at the shallow depth. The pattern for lingcod is probably real as a commercial fishery for lingcod exists in area 16, but not in area 15. The difference with copper rockfish may be an artifact of our sampling. We noticed that fewer copper rockfish were caught from the KETA, in comparision to other vessels. The KETA was also used more in area 15 than area 16.

The test for vessel effect on species composition in the <40 m depth stratum was significant for area 15 (Table 16a). Fewer copper rockfish and more quillback rockfish were caught from the KETA. The difference was only weakly significant for area 16 (Table 16b). We tended to fish deeper (within the <40 m depth stratum) with KETA because of vessel limitations and because we suspected that vessel noise reduced catch rates at depths shallower than about 30 m. There were insufficient data to test for the effect over other depth strata.

LENGTH-FREQUENCY ANALYSIS

We tested for the effect of lure type and depth on median fork length for each sex of each species for which there were sufficient data (copper, quillback and yelloweye rockfish and lingcod). A Wilcoxon two-sample test was first applied to test for the effect of lure type, combining over depth strata for data from cruises 2-5. Larger fish tended to be caught with herring, but the result was significant only for male copper rockfish ($p<0.01$) and female quillback rockfish ($p<0.05$). The effect of depth on median fork length was examined with Kruskal-Wallis tests. For yelloweye rockfish and lingcod, data were combined over lure types. There was no significant depth effect, and no pattern was apparent in the data. For quillback rockfish the analysis was performed only on fish caught with herring. Fork length tended to increase with depth, but the difference was only significant for females ($p<0.001$).

Groups that were not significantly different were combined in length-frequency histograms. Quillback (Fig. 3) and copper rockfish (Fig. 4) were caught over a relatively narrow range of lengths. The range of lengths was much greater for yelloweye rockfish (Fig. 5). The generally small size of lingcod (Fig. 6) is consistent with lingcod length-fequency data from the recreational angler fishery (Cass 1985).

ACKNOWLEDGMENTS

Terry Gjernes was invaluable in helping us to acquire angling gear and to standardize our jigging technique. Thanks to the master and crew of PANDORA II for their cooperation.

REFERENCES

Cass, A. J. 1985. Lingcod stock assessment. In: A. V. Tyler and G. A. McFarlane (Eds.) Groundfish stock assessments off the west coast of Canada in 1984 and recommended total allowable catches for 1984. Can. MS Rep. Fish. Aquat. Sci. 1813: 25-56.

Cass, A. J., R. J. Beamish, and M. S. Smith. 1984a. Study of the biology of lingcod off the west coast of Vancouver Island, M/V ARCTIC HARVESTER, November 22 - December 2, 1977b. Can. Data Rep. Fish. Aquat. Sci. 461: 73 p.

Cass, A. J., G. A. McFarlane, K. Rutherford, and I. Barber. 1984b. Lingcod tagging study in the Strait of Georgia, November 1982-March 1983. Can. MS Rep. Fish. Aquat. Sci. 1791: 49 p.

Harling, W. R., M. S. Smith, and N. A. Webb. 1971. Preliminary report on maturity, spawning season and larval identification of rockfishes (Scorpaenidae) collected during 1970. Fish. Res. Board Can. MS Rep. 1137: 26 p.

Nagtegaal, D. A. and S. P. Farlinger. 1980. Catches and trawl locations of M/V BLUE WATERS during rockfish exploration and assessment cruise to the west coast of the Queen Charlotte Islands, 1979. Can Data Rep. Fish. Aquat. Sci. 215: 74 p.

Richards, L. J. and A. J. Cass. 1985. Transect counts of rockfish in the Strait of Georgia from the submersible PISCES IV, October and November 1984. Can. Data Rep. Fish. Aquat. Sci.: (in press.).

Table 1. Site numbers and map co-ordinates for the NW corner of the site (1'N lat. by 1' W long.) block. See p. 2 for discussion.

Site	Lat.	Long.
15- 1	50° 13'	124° 58'
15- 6	50° 12'	124° 54'
15- 27	50° 09'	124° 54'
15- 33	50° 09'	124° 43'
15- 39	50° 08'	124° 52'
15- 56	50° 07'	124° 47'
15- 60	50° 07'	124° 43'
15- 71	50° 05'	124° 50'
15- 88	50° 03'	124° 57'
15- 97	50° 03'	124° 45'
15-103	50° 02'	124° 56'
15-105	50° 02'	124° 51'
15-121	50° 00'	124° 49'
16- 61	49° 40'	124° 29'
16- 73	49° 37'	124° 15'
16- 78	49° 35'	124° 21'
16-102	49° 32'	124° 14'
16-113	49° 00'	124° 10'
16-124	49° 32'	123° 59'
16-132	49° 31'	123° 56'
16-141	48° 29'	123° 56'
16-144	48° 28'	123° 58'
16-166	49° 50'	124° 01'
16-201	49° 40'	124° 05'
16-210	49° 45'	124° 11'
16-216	49° 45'	124° 14'
16-223	49° 42'	124° 13'
16-227	49° 40'	124° 10'
16-234	49° 38'	124° 06'
16-242	49° 35'	124° 03'

Table 2. Descriptions of codes for sea conditions, sounder information, general remarks, and lure type used in the following tables.

Code	Description
a) sea conditions	
1	calm
2	rippled
	30.5m chop
	41.0m chop
	51.5m chop
b) sounder information - a two-digit code	
first digit	
0	feed fish absent
1	feed fish present
second digit	
1	jagged bottom
2	slope
3	wall
4	flat shelf
5	pinnacle
6	fissures in bedrock
7	sand and rock mix
c) general remarks	
1	caught sponge
2	drifting off the site
3	seals present at site
4	jig with rod, but no fish caught
5	lures lost
6	casting, but no fish caught
7	fish lost before reaching surface
8	no sounder, depth uncertain
d) lure type - three-digit code (code as type, color hook size)	
first digit - type	
1	bullworm
2	scampi
3	needlefish
4	squid
5	Norwegian jig
7	buzz bomb
second digit - color	
1	green
2	yellow
3	white
4	pink
5	red
6	orange
7	purple
8	black
9	silver

Table 3. Codes used to describe rockfish maturity stages[a].

Maturity	code	Gonad condition
	0	Unknown
	1	Immature (translucent;males,stringlike;females small)
Females	2	Maturing (small, yellow eggs; translucent or opaque)
	3	Mature (large, orange-yellow eggs; opaque)
	4	Fertilized (large, orange-yellow eggs; translucent)
	5	Embryos or larvae (include eyed eggs)
	6	Spent (large, flaccid, red ovaries, a few larvae may be present)
	7	Resting (moderate size, firm, red-grey ovaries)
	8	Resorbing
Males	2	Maturing (stringlike, translucent, white)
	3	Developing (swelling, brown-white)
	4	Developed (large, white; easily broken)
	5	Running (running sperm)
	6	Spent (flaccid, red)
	7	Resting (ribbon-like; small, brown)

[a]From Nagtegaal and Farlinger (1980) based on maturity stages first described by Harling et al. (1971).

Table 4a. Automated jig results from cruise 1. Columns are set number, date (year month day), site number, start time, start or minimum depth, finish or maximum depth, median depth, anchor position (UP, up; DN, down), sun conditions (BR, bright; OV, overcast; MX, mixed), sea conditions, tide (FL, flood; SL, slack; EB, ebb), sounder information, and remarks.

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
1	840704	16-113	841	18	13	18	UP	OV	1		11	
2	840704	16-113	905	24	18	18	UP	OV	2		01	
3	840704	16-113	910	11	16	13	UP	OV	1		11	
4	840704	16-113	925	15	15	15	UP	OV	2		01	
5	840704	16-113	948	37	37	37	UP	OV	4		03	
6	840704	16-113	950	37	55	55	UP	OV	4	SL	03	
7	840704	16-113	1021	64	91	78	UP	OV	4		03	
8	840704	16-113	1022	66	66	66	UP	OV	4		03	
9	840704	16-102	1128	51	37	44	UP	OV	4		03	
10	840704	16-102	1129	37	27	37	UP	OV	4		13	
11	840704	16-102	1141	33	18	18	UP	OV	4		13	
12	840704	16-102	1145	18	37	27	UP	OV	5		13	
13	840704	16-102	1150	27	18	18	UP	OV	5		13	
14	840705	16- 78	801	22	37	26	UP	BR	3	FL	02	
15	840705	16- 78	802	33	18	18	UP	BR	3	FL	02	
16	840705	16- 78	821	42	62	46	UP	MX	4	FL	03	
17	840705	16- 78	822	46	49	49	UP	BR	4	FL	02	
18	840705	16- 78	1004	37	27	27	UP	BR	4	FL	02	
19	840705	16- 61	1010	46	26	37	UP	MX	4	SL	13	
20	840705	16- 36	1622	37	59	51	UP	MX	3	EB	01	
21	840705	16- 36	1622	46	46	46	UP	MX	3	EB	01	
22	840705	16- 15	1740	15	18	15	UP	BR	3	EB	03	
23	840705	16- 15	1740	9	18	18	UP	BR	3	EB	03	
24	840705	16- 15	1804	46	46	46	UP	BR	2	SL	14	
25	840705	16- 15	1804	46	53	51	UP	BR	2	SL	14	
26	840706	15-139	927	37	55	46	UP	OV	1	FL	04	
27	840706	15-139	1012	34	34	34	UP	MX	2	FL	01	
28	840706	15-139	1012	29	32	31	UP	OV	2	FL	05	
29	840706	15-105	1140	70	70	70	UP	BR	2	SL	03	
30	840706	15-121	1153	37	46	46	UP	BR	2	SL	06	
31	840706	15-121	1153	9	37	22	UP	MX	2	SL	16	
32	840706	15-121	1218	15	15	15	UP	BR	2	SL	06	
33	840706	15-121	1258	51	64	55	UP	BR	2	SL	03	
34	840706	15-121	1259	64	64	64	UP	BR	2	SL	03	
35	840706	15-105	1352	18	37	18	UP	BR	2	SL	13	
36	840706	15-105	1353	18	37	18	UP	BR	1	SL	13	
37	840706	15-105	1439	55	64	55	UP	BR	2	SL	03	
38	840706	15-105	1505	73	73	73	UP	BR	2	SL	03	
39	840706	15- 71	1557	33	33	33	UP	OV	2	FL	07	
40	840706	15- 71	1558	18	18	18	UP	OV	2	EB	07	
41	840707	15- 6	911	55	73	73	UP	OV	3	SL	03	

Table 4a (cont'd)

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
42	840707	15- 6	915	73	73	73	UP	BR	3	SL	03	
43	840707	15- 6	1005	33	33	33	UP	OV	3	SL	01	
44	840707	15- 6	1006	27	16	18	UP	OV	3	FL	01	
45	840707	15- 1	1050	98	18	18	UP	OV	2	FL	07	
46	840707	15- 1	1052	18	27	23	UP	OV	2	FL	07	
47	840707	15- 1	1135	33	37	35	UP	OV	2	SL	07	
48	840707	15- 1	1246	46	55	55	UP	BR	2	SL	07	
49	840707	15- 1	1247	38	55	48	UP	BR	2	EB	07	
50	840707	15- 27	1400	18	26	26	UP	MX	2	SL	07	
51	840707	15- 27	1400	37	18	26	UP	BR	1	SL	07	
52	840707	15- 27	1431	51	55	55	UP	BR	2	SL	03	
53	840707	15- 27	1432	46	46	46	UP	OV	2	SL	03	
54	840707	15- 27	1504	73	73	73	UP	OV	2	SL	03	
55	840707	15- 39	1520	64	46	60	UP	MX	1	EB	02	
56	840707	15- 39	1522	60	62	62	UP	BR	2	SL	04	
57	840707	15- 39	1548	27	35	35	UP	BR	2	SL	01	
58	840707	15- 39	1553	27	27	27	UP	BR	1	EB	01	
59	840707	15- 39	1617	22	26	22	UP	BR	2	SL	04	
60	840707	15- 39	1621	18	37	27	UP	BR	1	EB	04	
61	840708	15- 33	813	27	27	27	UP	OV	2	SL	03	
62	840708	15- 33	845	46	55	55	UP	BR	2	SL	03	
63	840708	15- 33	847	46	46	46	UP	OV	1	SL	03	
64	840708	15- 33	922	82	64	73	UP	OV	2	SL	03	
65	840708	15- 56	939	60	70	79	UP	BR	1	SL	03	
66	840708	15- 33	1013	103	103	92	UP	BR	2	SL	01	
67	840708	15- 33	1015	91	91	91	UP	OV	2	SL	03	
68	840708	15- 33	1043	46	33	33	UP	BR	2	FL	04	
69	840708	15- 33	1044	40	29	29	UP	BR	2	SL	03	
70	840708	15- 33	1116	18	18	18	UP	BR	2	FL	04	
71	840708	15- 33	1116	9	26	9	UP	BR	2	SL	05	
72	840708	15- 33	1153	18	27	18	UP	BR	2	FL	02	
73	840708	15- 33	1153	46	24	24	UP	BR	2	SL	02	
74	840708	15- 33	1221	46	46	44	UP	BR	1	SL	03	
75	840708	15- 33	1222	46	46	46	UP	BR	1	FL	02	
76	840708	15- 60	1351	46	40	46	UP	BR	2	SL	03	
77	840708	15- 60	1425	27	27	27	UP	BR	3	FL	04	
78	840708	15- 60	1455	77	64	64	UP	BR	3	FL	04	
79	840708	15- 60	1456	81	77	81	UP	BR	3	FL	05	
80	840708	15- 60	1505	51	64	51	UP	BR	3	FL	05	
81	840708	15- 60	1541	11	33	37	UP	BR	3	FL	04	
82	840708	15- 33	1814	26	26	26	UP	OV	1	SL	06	
83	840709	15- 56	826	13	22	18	UP	BR	2	EB	03	
84	840709	15- 56	827	31	46	39	UP	BR	2	SL	03	
85	840709	15- 56	904	31	40	37	UP	BR	1	SL	03	
86	840709	15- 56	939	70	79	73	UP	BR	1	SL	03	
87	840709	15- 97	1106	22	29	26	UP	BR	1	FL	02	
88	840709	15- 97	1107	24	24	24	UP	BR	2	FL	05	

Table 4a (cont'd)

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
89	840709	15- 97	1147	18	18	18	UP	BR	2	FL	03	
90	840709	15- 89	1403	18	18	18	UP	BR	3	FL	04	
91	840709	15- 89	1403	7	29	13	UP	BR	3	SL	03	
92	840709	15- 89	1433	9	17	13	UP	BR	3	FL	02	
93	840709	15- 89	1459	9	9	9	UP	BR	3	SL	04	
94	840709	15- 89	1501	9	15	9	UP	BR	4	SL	03	
95	840709	15- 89	1556	70	58	64	UP	BR	2	SL	04	
96	840709	15- 89	1556	64	92	64	UP	BR	2	SL	03	
97	840710	15- 89	816	27	18	18	UP	BR	1	SL	02	
98	840710	15- 89	817	22	29	26	UP	BR	2	SL	02	
99	840710	15- 89	850	37	37	47	UP	BR	1	SL	13	
100	840710	15- 89	850	71	55	55	UP	BR	1	SL	03	
101	840710	15- 89	912	73	73	73	UP	BR	1	SL	13	
102	840710	15- 89	945	37	37	62	UP	BR	1	FL	13	
103	840710	15- 89	948	55	55	62	UP	BR	1	SL	13	
104	840710	15- 89	1020	26	29	26	UP	BR	2	SL	02	
105	840710	15- 89	1021	27	9	18	UP	BR	2	FL	04	
106	840710	15- 89	1059	27	33	29	UP	BR	2	FL		
107	840710	15- 89	1100	29	48	33	UP	BR	2	SL	02	
108	840710	15- 89	1122	46	55	50	UP	BR	2	FL		

Table 4b. Catches by automated jig from cruise 1. Columns are set number, lure type, lure position, number of hooks, number of fish caught, duration (h), and counts for each species. DF dogfish, Squalus acanthias; RF ratfish, Hydrolagus colliei; CH chinook salmon, Oncorhynchus tshawytscha; SG silvergrey rockfish, Sebastes brevispinus; CO copper rockfish, S. caurinus; GS greenstriped rockfish, S. elongatus; QB quillback rockfish, S. maliger; TI tiger rockfish, S. nigrocinctus; YE yelloweye rockfish, S. ruberrimus; KG kelp greenling, Hexagrammos decagammus; LC lingcod, Ophiodon elongatus; BS butter sole, Isopsetta isolepis; RS rock sole, Lepidopsetta bilineata.

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
1	593	1	4	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
1	223	2	4	1	0.32	0	0	0	0	0	0	0	0	0	0	1	0	0
1	443	3	4	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
1	213	4	4	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
2	593	1	4	0	0.63	0	0	0	0	0	0	0	0	0	0	0	0	0
2	223	2	4	0	0.63	0	0	0	0	0	0	0	0	0	0	0	0	0
2	443	3	4	0	0.63	0	0	0	0	0	0	0	0	0	0	0	0	0
2	213	4	4	0	0.63	0	0	0	0	0	0	0	0	0	0	0	0	0
3	123	1	4	1	0.25	0	0	0	0	1	0	0	0	0	0	0	0	0
3	313	2	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
3	343	3	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
3	443	4	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
4	123	1	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
4	313	2	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
4	343	3	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
5	123	1	4	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
5	313	2	4	1	0.43	0	0	0	0	0	0	1	0	0	0	0	0	0
5	213	3	4	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
5	243	4	4	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
6	593	1	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
6	223	2	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
6	443	3	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
6	213	4	4	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
7	123	1	4	0	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0
7	313	2	4	0	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0
7	213	3	4	0	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0
7	243	4	4	0	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0
8	593	1	4	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0
8	223	2	4	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0
8	443	3	4	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0
8	213	4	4	0	0.45	0	0	0	0	0	0	0	0	0	0	0	0	0
9	123	1	4	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
9	313	2	4	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
9	213	3	4	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
9	243	4	4	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
10	223	1	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
10	443	2	3	1	0.20	0	0	0	0	0	0	1	0	0	0	0	0	0
10	213	3	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
11	223	1	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
11	443	2	3	1	0.20	0	0	0	0	0	0	1	0	0	0	0	0	0
11	213	3	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
12	123	1	4	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
12	313	2	4	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
12	213	3	4	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
12	243	4	4	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
13	223	1	3	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0
13	443	2	3	1	0.10	0	0	0	0	0	0	1	0	0	0	0	0	0
13	213	3	3	0	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0
14	313	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
14	213	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
14	223	3	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
15	313	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
15	443	2	3	1	0.25	0	0	0	0	0	0	0	0	0	0	1	0	0
15	213	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
16	313	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
16	213	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
16	283	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
17	313	1	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
17	443	2	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
17	213	3	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	313	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
18	443	2	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
18	213	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
19	313	1	3	1	0.33	0	0	0	0	0	0	0	0	0	0	0	0	1
19	453	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
19	283	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
20	313	1	3	0	0.37	0	0	0	0	0	0	0	0	0	0	0	0	0
20	453	2	3	0	0.37	0	0	0	0	0	0	0	0	0	0	0	0	0
20	323	3	3	0	0.37	0	0	0	0	0	0	0	0	0	0	0	0	0
21	443	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
21	232	2	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
21	213	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
22	313	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
22	453	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
22	323	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
23	443	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
23	233	2	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
23	213	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
24	313	1	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
24	453	2	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
24	323	3	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
25	443	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
25	233	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
25	213	3	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
26	313	1	3	0	0.12	0	0	0	0	0	0	0	0	0	0	0	0	0
26	443	2	3	0	0.12	0	0	0	0	0	0	0	0	0	0	0	0	0
26	213	3	3	0	0.12	0	0	0	0	0	0	0	0	0	0	0	0	0
27	223	1	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
27	433	2	3	1	0.38	0	0	0	0	0	0	0	0	1	0	0	0	0
27	443	3	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
28	283	1	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
28	213	1	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
28	353	2	3	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
28	313	3	3	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
29	223	1	3	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0
29	433	2	3	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0
29	443	3	3	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0
30	223	1	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
30	433	2	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
30	443	3	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
31	313	1	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
31	283	1	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
31	233	2	3	0	0.53	0	0	0	0	0	0	0	0	0	0	0	0	0
31	243	3	3	0	0.53	0	0	0	0	0	0	0	0	0	0	0	0	0
32	223	1	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
32	433	2	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
32	443	3	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
33	243	1	3	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
33	313	2	3	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
33	233	3	3	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
34	223	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
34	433	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
34	443	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
35	223	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
35	433	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
35	443	3	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
36	313	1	3	0	0.24	0	0	0	0	0	0	0	0	0	0	0	0	0
36	243	1	3	0	0.24	0	0	0	0	0	0	0	0	0	0	0	0	0
36	353	2	3	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
36	233	3	3	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
37	313	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
37	243	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
37	283	3	3	0	0.15	0	0	0	0	0	0	0	0	0	0	0	0	0
37	233	3	3	1	0.15	0	0	0	0	0	0	1	0	0	0	0	0	0
38	533	1	3	1	0.33	0	0	0	0	0	0	0	0	1	0	0	0	0
38	243	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
38	283	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
39	243	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
39	433	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
39	443	3	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
40	533	1	3	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
40	243	2	3	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
40	133	3	3	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
41	433	1	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
41	283	2	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
41	233	3	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
42	253	1	3	1	0.20	0	0	0	0	0	0	0	0	1	0	0	0	0
42	343	2	3	1	0.20	0	0	0	0	0	1	0	0	0	0	0	0	0
42	343	3	3	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
43	223	1	2	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
43	433	1	2	0	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0
44	213	1	3	0	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0
44	313	1	3	0	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0
44	433	1	3	0	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0
44	233	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
44	433	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
45	223	1	2	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
45	433	1	2	0	0.48	0	0	0	0	0	0	0	0	0	0	0	0	0
46	313	1	3	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
46	233	2	3	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
46	353	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
46	433	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
47	443	1	3	0	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0
47	343	2	3	0	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0
47	432	3	3	0	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0
48	443	1	3	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
48	433	2	3	0	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0
48	233	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
48	353	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
49	253	1	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
49	343	2	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
49	433	3	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
50	213	1	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
50	433	2	3	0	0.18	0	0	0	0	0	0	0	0	0	0	0	0	0
50	443	2	3	0	0.18	0	0	0	0	0	0	0	0	0	0	0	0	0
50	313	3	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
51	253	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
51	343	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
51	433	3	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
52	253	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
52	343	2	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
52	433	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
53	283	1	3	0	0.19	0	0	0	0	0	0	0	0	0	0	0	0	0
53	433	1	3	0	0.19	0	0	0	0	0	0	0	0	0	0	0	0	0
53	353	2	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
53	313	3	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
54	253	1	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
54	343	2	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
54	433	3	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
55	233	1	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
55	353	2	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
55	313	3	3	0	0.21	0	0	0	0	0	0	0	0	0	0	0	0	0
55	433	3	3	0	0.21	0	0	0	0	0	0	0	0	0	0	0	0	0
56	253	1	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
56	343	2	3	1	0.22	1	0	0	0	0	0	0	0	0	0	0	0	0
56	433	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
57	253	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
57	343	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
57	433	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
58	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
58	353	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
58	433	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
59	253	1	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
59	343	2	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
59	433	3	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
60	433	1	3	0	0.18	0	0	0	0	0	0	0	0	0	0	0	0	0
60	343	1	3	0	0.18	0	0	0	0	0	0	0	0	0	0	0	0	0
60	213	2	3	0	0.37	0	0	0	0	0	0	0	0	0	0	0	0	0
60	273	3	3	0	0.37	0	0	0	0	0	0	0	0	0	0	0	0	0
61	433	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
61	343	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
61	343	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
62	433	1	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
62	343	2	3	1	0.22	0	0	0	0	0	0	0	0	1	0	0	0	0
62	343	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
63	143	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
63	143	2	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
63	SIL	2	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
63	333	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
64	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
64	133	2	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
64	143	2	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
64	433	3	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
64	333	3	3	1	0.17	1	0	0	0	0	0	0	0	0	0	0	0	0
65	323	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
65	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
65	333	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
66	343	1	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
66	343	2	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
66	233	3	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
67	353	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
67	333	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
67	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
68	343	1	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
68	143	2	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
68	333	3	3	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
69	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
69	343	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
69	413	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
70	433	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
70	353	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
70	143	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
71	283	1	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
71	343	2	3	1	0.27	0	0	0	0	1	0	0	0	0	0	0	0	0
71	433	3	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
72	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
72	353	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
72	433	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
73	283	1	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
73	343	2	3	1	0.27	0	0	0	0	0	0	0	0	1	0	0	0	0
73	433	3	3	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
74	283	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
74	343	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
74	433	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
75	323	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
75	353	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
75	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
76	343	1	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
76	443	2	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
76	433	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
77	323	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
77	313	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
77	343	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
78	323	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
78	313	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
78	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
79	433	1	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
79	343	1	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
79	343	2	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
79	343	2	3	1	0.05	0	0	0	0	0	0	0	0	1	0	0	0	0
79	233	3	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
79	343	3	3	0	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0
80	433	1	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
80	343	2	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
80	343	3	3	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
81	323	1	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
81	313	2	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
81	343	3	3	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
82	143	1	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
82	353	1	3	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
82	133	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
82	433	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
83	143	1	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
83	343	2	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
83	433	3	3	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
84	433	1	3	1	0.28	0	0	0	0	0	0	0	0	1	0	0	0	0
84	343	2	3	1	0.28	0	0	0	0	0	0	0	0	1	0	0	0	0
84	233	3	3	1	0.28	0	0	0	0	0	0	0	0	1	0	0	0	0
85	333	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
85	323	2	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
85	343	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
86	433	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
86	343	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
86	233	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
87	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
87	313	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
87	323	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
88	433	1	3	0	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0
88	343	2	3	0	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0
88	233	3	3	0	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0
89	313	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
89	343	2	3	1	0.25	0	0	0	0	0	0	0	0	0	0	1	0	0
89	433	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
90	433	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
90	143	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
90	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
91	343	1	3	1	0.37	0	0	0	0	1	0	0	0	0	0	0	0	0
91	343	2	3	1	0.37	0	0	0	0	1	0	0	0	0	0	0	0	0
91	213	3	3	1	0.37	0	0	0	0	1	0	0	0	0	0	0	0	0
92	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
92	323	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
92	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
93	343	1	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
93	323	2	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
93	343	3	3	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
94	343	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
94	343	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
94	213	3	3	1	0.28	0	0	0	0	1	0	0	0	0	0	0	0	0
95	313	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
95	323	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
95	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
96	343	1	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
96	343	2	3	1	0.32	1	0	0	0	0	0	0	0	0	0	0	0	0
96	213	3	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4b (cont'd)

SET	LUR	P	NH	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
97	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
97	143	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
97	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
98	343	1	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
98	343	2	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
98	213	3	3	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
99	313	0	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
99	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
99	323	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
100	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
100	343	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
100	213	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
101	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
101	323	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
101	313	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
102	323	1	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
102	313	2	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
102	343	3	3	0	0.22	0	0	0	0	0	0	0	0	0	0	0	0	0
103	343	1	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
103	343	2	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
103	213	3	3	0	0.32	0	0	0	0	0	0	0	0	0	0	0	0	0
104	343	1	3	1	0.33	0	0	0	0	0	0	0	0	1	0	0	0	0
104	343	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
104	213	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
105	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
105	143	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
105	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
106	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
106	313	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
106	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
107	343	1	3	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
107	343	2	3	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
107	213	3	3	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
108	343	1	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
108	313	2	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
108	343	3	3	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 5a. Cruise 1, results from casting to within a few meters of the surface with angling gear. Columns are set number, date (year month day), site number, start time, start or minimum depth, finish or maximum depth, median depth, anchor position (UP, up; DN, down), sun conditions (BR, bright; OV, overcast; MX, mixed), sea conditions, tide (FL, flood; SL, slack; EB, ebb), sounder information, and remarks.

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
109	840707	15- 27	1435	6	15	9	UP	BR	2	SL	03	
110	840707	15- 39	1622	9	11	11	UP	BR	2	SL	03	
111	840707	15- 33	2110	7	18	11	UP	OV	1	SL	03	4
112	840708	15- 33	821	6	11	7	UP	OV	2	SL	03	
113	840708	15- 33	850	7	9	9	UP	BR	2	SL	03	
114	840708	15- 33	1020	9	9	9	UP	OV	2	SL	03	
115	840708	15- 33	1129	6	6	6	UP	BR	2	SL	03	
116	840709	15- 89	1501	9	15	9	UP	BR	4	SL	03	

Table 5b. Cruise 1, results from casting to within a few meters of the surface with angling gear. Columns are set number, lure type, number of lines in the water, number of fish caught, duration (h), and counts for each species. DF dogfish, Squalus acanthias; RF ratfish, Hydrolagus colliei; CH chinook salmon, Oncorhynchus tshawytscha; SG silvergrey rockfish, Sebastes brevispinus; CO copper rockfish, S. caurinus; GS greenstriped rockfish, S. elongatus; QB quillback rockfish, S. maliger; TI tiger rockfish, S. nigrocinctus; YE yelloweye rockfish, S. ruberrimus; KG kelp greenling, Hexagrammos decagammus; LC lingcod, Ophiodon elongatus; BS butter sole, Isopsetta isolepis; RS rock sole, Lepidopsetta bilineata.

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
109	733	1	3	0.05	0	0	0	0	3	0	0	0	0	0	0	0	0
110	730	1	4	0.13	0	0	0	0	3	0	1	0	0	0	0	0	0
111	730	1	4	0.25	0	0	0	0	4	0	0	0	0	0	0	0	0
112	730	1	2	0.08	0	0	0	0	2	0	0	0	0	0	0	0	0
113	720	1	2	0.13	0	0	0	0	2	0	0	0	0	0	0	0	0
114	730	1	3	0.17	0	0	0	0	3	0	0	0	0	0	0	0	0
115	730	1	3	0.03	0	0	0	0	1	0	0	0	2	0	0	0	0
116	730	1	1	0.28	0	0	0	0	1	0	0	0	0	0	0	0	0

Table 6a. Cruise 1, results from jigging with angling year. Columns are set number, date (year month day), site number, start time, start or minimum depth, finish or maximum depth, median depth, anchor position (UP, up; DN, down), sun conditions (BR, bright; OV, overcast; MX, mixed), sea conditions, tide (FL, flood; SL, slack; EB, ebb), sounder information, and remarks.

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
117	840707	15- 33	2110	7	18	11	UP	OV	1	SL	03	
118	840708	15- 33	1043	46	33	33	UP	BR	2	FL	04	
119	840708	15- 33	1116	18	18	18	UP	BR	2	FL	04	
120	840708	15- 33	1153	18	18	18	UP	BR	1	FL	02	
121	840708	15- 33	1222	46	46	46	UP	BR	1	FL	02	
122	840708	15- 60	1425	27	27	27	UP	BR	3	FL	04	
123	840708	15- 60	1541	11	33	37	UP	BR	3	FL	04	
124	840709	15- 56	826	18	18	18	UP	BR	2	EB	03	
125	840709	15- 56	827	31	31	31	UP	BR	1	SL	03	
126	840709	15- 56	904	37	37	37	UP	BR	1	SL	03	
127	840709	15- 97	1106	22	29	26	UP	BR	1	FL	02	
128	840710	15- 89	817	22	29	26	UP	BR	2	SL	02	
129	840710	15- 89	1021	27	9	18	UP	BR	2	FL	04	
130	840710	15- 89	1100	29	48	33	UP	BR	2	SL	02	

Table 6b. Cruise 1, results from jigging with angling gear. Columns are set number, lure type, number of lines in the water, number of fish caught, duration (h), and counts for each species. DF dogfish, Squalus acanthias; RF ratfish, Hydrolagus colliei; CH chinook salmon, Oncorhynchus tshawytscha; SG silvergrey rockfish, Sebastes brevispinus; CO copper rockfish, S. caurinus; GS greenstriped rockfish, S. elongatus; QB quillback rockfish, S. maliger; TI tiger rockfish, S. nigrocinctus; YE yelloweye rockfish, S. ruberrimus; KG kelp greenling, Hexagrammos decagammus; LC lingcod, Ophiodon elongatus; BS butter sole, Isopsetta isolepis; RS rock sole, Lepidopsetta bilineata.

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
117	SIL	1	4	0.25	0	0	0	0	4	0	0	0	0	0	0	0	0
118	SIL	1	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
119	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
120	SIL	1	1	0.33	0	0	0	0	0	0	0	1	0	0	0	0	0
121	SIL	1	1	0.33	0	0	0	0	0	0	1	0	0	0	0	0	0
122	SIL	1	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
123	SIL	1	1	0.35	0	0	0	0	0	0	0	0	0	0	1	0	0
124	SIL	1	1	0.33	0	0	0	0	0	0	1	0	0	0	0	0	0
125	730	1	2	0.20	0	0	0	0	0	0	2	0	0	0	0	0	0
126	SIL	1	1	0.25	0	0	0	0	0	0	1	0	0	0	0	0	0
127	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
128	SIL	1	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
129	SIL	1	1	0.33	0	0	0	0	0	0	0	0	1	0	0	0	0
130	SIL	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 7a. Cruise 2, results from jigging with angling year. Columns are set number, date (year month day), site number, start time, start or minimum depth, finish or maximum depth, median depth, anchor position (UP, up; DN, down), sun conditions (BR, bright; OV, overcast; MX, mixed), sea conditions, tide (FL, flood; SL, slack; EB, ebb), sounder information, and remarks.

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
117	840707	15- 33	2110	7	18	11	UP	OV	1	SL	03	
130	840724	16-132	1200	9	9	9	DN	BR	2	FL		
131	840724	16-132	1240	6	15	13	DN	BR	2	FL		
132	840724	16-132	1340	9	9	9	DN	BR	1	FL	2	
133	840724	16-124	1608	13	13	13	DN	BR	1	SL		
134	840725	16-132	1155	11	8	9	DN	BR	2	SL		
135	840725	16-132	1235	8	8	8	DN	BR	2	SL	7	
136	840725	16-124	1328	16	16	16	DN	BR	2	FL		
137	840725	16-124	1345	16	12	14	DN	MX	2	FL		
138	840725	16-124	1405	13	13	13	DN	BR	2	FL		
139	840726	16-124	1221	36	27	29	DN	BR	3	FL		
140	840726	16-124	1330	35	15	15	UP	BR	4	FL	2	
141	840726	16-124	1346	27	27	27	DN	BR	5	FL		
142	840727	16-144	930	27	20	24	DN	BR	2	EB		
143	840727	16-144	1025	18	22	20	DN	BR	2	EB		
144	840727	16-144	1055	15	9	12	DN	BR	2	FL	7	
145	840727	16-141	1147	20	20	20	DN	BR	3	FL		
146	840727	16-141	1234	13	13	13	DN	BR	2	FL		
147	840727	16-141	1307	18	18	18	UP	BR	1	FL	7	
148	840727	16-141	1407	10	18	14	UP	BR	1	FL	7	
149	840728	16-242	903	9	26	17	UP	BR	3	SL		
150	840728	16-242	1415	9	9	9	UP	BR	3	FL		
151	840728	16-242	1730	13	13	13	UP	BR	3	SL		
152	840729	16-242	1042	9	9	9	DN	BR	4	EB		
153	840729	16-227	1500	6	6	6	UP	BR	3	FL		
154	840729	16-234	1645	18	18	18	UP	BR	4	FL		
155	840729	16-234	1650	18	18	18	UP	BR	4	FL		
156	840729	16-227	1736	17	17	17	UP	BR	5	FL		
157	840730	16-227	1040	14	14	14	DN	BR	2	SL	7	
158	840730	16-227	1055	14	14	14	DN	BR	2	SL		
159	840730	16-227	1115	14	14	14	DN	BR	3	SL		
160	840730	16-227	1138	12	12	12	DN	BR	2	SL		
161	840730	16-227	1150	12	12	12	UP	BR	2	SL		
162	840730	16-201	1424	46	9	27	UP	BR	2	FL		
163	840730	16-201	1500	13	13	13	UP	BR	2	FL		
164	840730	16-201	1535	9	18	13	UP	BR	2	FL		
165	840730	16-234	1643	15	6	10	UP	BR	2	FL		
166	840731	16-201	1030	27	27	27	UP	BR	2	EB		
167	840731	16-201	1052	12	12	12	UP	BR	2	EB		
168	840731	16-201	1134	35	18	27	UP	BR	2	EB		
169	840731	16-201	1152	30	15	25	UP	BR	2	EB		
170	840731	16-234	1505	15	15	15	DN	BR	2	EB		

Table 7a (cont'd)

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
171	840731	16-234	1605	15	15	15	DN	BR	1	SL		
172	840801	16-234	1135	12	12	12	DN	BR	2	EB		
173	840801	16-234	1140	15	15	15	DN	BR	2	EB		
174	840801	16-234	1205	24	24	24	UP	BR	2	EB		
175	840801	16-234	1323	27	11	19	UP	BR	1	EB		
176	840801	16-201	1528	10	10	10	UP	BR	2	FL		
177	840802	16-201	1048	27	9	18	UP	OV	3	EB		
178	840802	16-201	1225	9	9	9	UP	MX	3	EB		

Table 7b. Cruise 2, results from jigging with angling gear. Columns are set number, lure type, number of lines in the water, number of fish caught, duration (h), and counts for each species. DF dogfish, Squalus acanthias; RF ratfish, Hydrolagus colliei; CH chinook salmon, Oncorhynchus tshawytscha; SG silvergrey rockfish, Sebastes brevispinus; CO copper rockfish, S. caurinus; GS greenstriped rockfish, S. elongatus; QB quillback rockfish, S. maliger; TI tiger rockfish, S. nigrocinctus; YE yelloweye rockfish, S. ruberrimus; KG kelp greenling, Hexagrammos decagammus; LC lingcod, Ophiodon elongatus; BS butter sole, Isopsetta isolepis; RS rock sole, Lepidopsetta bilineata.

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
130	SIL	1	1	0.49	0	0	0	0	1	0	0	0	0	0	0	0	0
130	HER	1	1	0.49	0	0	0	0	1	0	0	0	0	0	0	0	0
131	SIL	2	0	0.67	0	0	0	0	0	0	0	0	0	0	0	0	0
131	HER	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
132	SIL	2	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
132	HER	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
133	SIL	2	1	1.00	0	0	0	0	1	0	0	0	0	0	0	0	0
133	HER	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
134	SIL	1	0	0.54	0	0	0	0	0	0	0	0	0	0	0	0	0
134	HER	1	0	0.54	0	0	0	0	0	0	0	0	0	0	0	0	0
135	SIL	2	0	0.53	0	0	0	0	0	0	0	0	0	0	0	0	0
135	HER	1	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
136	SIL	2	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
136	HER	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
137	SIL	2	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
137	HER	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
138	SIL	2	0	0.60	0	0	0	0	0	0	0	0	0	0	0	0	0
138	HER	1	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
139	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
139	HER	2	0	0.67	0	0	0	0	0	0	0	0	0	0	0	0	0
140	SIL	1	0	0.12	0	0	0	0	0	0	0	0	0	0	0	0	0
140	HER	2	0	0.23	0	0	0	0	0	0	0	0	0	0	0	0	0
141	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
141	HER	2	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
142	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
142	HER	2	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
143	SIL	1	0	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0
143	HER	2	0	0.77	0	0	0	0	0	0	0	0	0	0	0	0	0
144	SIL	1	0	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0
144	HER	2	0	0.70	0	0	0	0	0	0	0	0	0	0	0	0	0
145	SIL	1	0	0.47	0	0	0	0	0	0	0	0	0	0	0	0	0
145	HER	1	1	0.47	0	0	0	0	1	0	0	0	0	0	0	0	0
146	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
146	HER	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
147	SIL	1	3	1.00	0	0	0	0	3	0	0	0	0	0	0	0	0
147	HER	1	3	1.00	0	0	0	0	3	0	0	0	0	0	0	0	0
148	SIL	1	5	0.88	0	0	0	0	5	0	0	0	0	0	0	0	0
148	HER	1	1	0.88	0	0	0	0	1	0	0	0	0	0	0	0	0
149	HER	2	5	2.93	1	0	0	0	2	0	1	0	0	0	0	0	1

Table 7b (cont'd)

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
150	HER	3	9	2.75	0	0	0	0	2	0	1	0	0	0	6	0	0
151	SIL	2	0	0.57	0	0	0	0	0	0	0	0	0	0	0	0	0
151	HER	1	1	0.28	0	0	0	0	0	0	0	0	0	0	1	0	0
152	HER	1	2	0.23	0	0	0	0	2	0	0	0	0	0	0	0	0
153	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
153	HER	2	1	0.67	0	0	0	0	0	0	0	0	0	0	1	0	0
154	HER	2	2	0.17	0	0	0	0	0	0	0	0	0	0	2	0	0
155	SIL	2	1	0.60	0	0	0	0	1	0	0	0	0	0	0	0	0
156	HER	2	4	0.80	0	0	0	0	3	0	0	0	0	0	1	0	0
157	HER	1	1	0.03	0	0	0	0	1	0	0	0	0	0	0	0	0
158	HER	2	5	0.63	0	0	0	0	4	0	0	0	0	0	1	0	0
159	SIL	1	0	0.37	0	0	0	0	0	0	0	0	0	0	0	0	0
159	HER	2	6	0.73	0	0	0	0	2	0	1	0	0	0	3	0	0
160	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
160	HER	2	2	0.33	0	0	0	0	0	0	0	0	0	0	2	0	0
161	SIL	1	0	1.42	0	0	0	0	0	0	0	0	0	0	0	0	0
161	HER	2	6	2.83	4	0	0	0	1	0	0	0	0	0	1	0	0
162	HER	3	4	1.40	0	0	0	0	3	0	0	0	0	0	1	0	0
163	SIL	1	1	0.17	0	0	0	0	1	0	0	0	0	0	0	0	0
163	HER	2	1	0.33	0	0	0	0	0	0	0	0	0	0	1	0	0
164	SIL	3	5	2.25	0	0	0	0	3	0	1	0	0	0	1	0	0
165	SIL	3	0	0.85	0	0	0	0	0	0	0	0	0	0	0	0	0
166	HER	2	0	0.67	0	0	0	0	0	0	0	0	0	0	0	0	0
167	HER	3	5	2.05	0	0	0	0	2	0	0	0	0	0	3	0	0
168	HER	3	0	0.60	0	0	0	0	0	0	0	0	0	0	0	0	0
169	HER	3	2	3.00	0	0	0	0	0	0	0	0	1	0	1	0	0
170	HER	3	4	2.95	0	0	0	0	0	0	3	0	0	0	1	0	0
171	SIL	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
171	HER	2	2	1.00	0	1	0	0	0	0	1	0	0	0	0	0	0
172	HER	2	2	0.33	0	0	0	0	0	0	0	0	0	0	2	0	0
173	HER	3	0	1.15	0	0	0	0	0	0	0	0	0	0	0	0	0
174	HER	3	6	3.85	0	0	0	0	2	0	3	0	0	0	1	0	0
175	HER	3	2	2.10	0	0	0	0	0	0	1	0	0	0	1	0	0
176	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
176	HER	2	1	0.67	0	0	0	0	0	0	0	0	0	0	1	0	0
177	HER	3	12	4.85	0	0	0	0	8	0	1	0	0	0	3	0	0
178	HER	1	1	0.17	0	0	0	0	0	0	0	0	0	1	0	0	0

Table 8a. Cruise 3, results from jigging with angling gear. Columns are set number, date (year month day), site number, start time, start or minimum depth, finish or maximum depth, median depth, anchor position (UP, up; DN, down), sun conditions (BR, bright; OV, overcast; MX, mixed), sea conditions, tide code, sounder information, and remarks.

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
179	840814	16-113	1505	18	33	26	UP	OV	4	+1	12	
180	840814	16-113	1602	15	18	15	UP	BR	3	+2	12	
181	840814	16-113	1615	15	27	22	UP	MX	4	+3	12	
182	840815	16-102	858	15	33	22	UP	BR	2	-5	13	
183	840815	16-102	900	33	33	33	UP	BR	2	-5	13	
184	840815	16-102	934	9	18	14	UP	BR	2	-5	13	
185	840815	16-102	935	15	15	15	UP	BR	2	-5	13	
186	840815	16-102	958	9	18	14	UP	BR	2	-4	13	
187	840815	16-102	1015	46	46	46	UP	BR	2	-4	13	
188	840815	16-102	1018	46	46	46	UP	BR	3	-4	13	
189	840815	16-102	1050	46	46	46	UP	BR	2	-4	13	
190	840815	16-102	1115	46	46	46	UP	BR	2	-3	13	
191	840815	16-102	1150	82	82	82	UP	BR	2	-3	13	
192	840815	16-102	1154	73	88	83	UP	BR	2	-2	13	
193	840815	16-102	1243	82	82	82	UP	BR	2	-2	13	
194	840815	16-113	1330	18	18	18	UP	BR	2	+1	12	
195	840815	16-113	1400	13	13	13	UP	BR	2	+1	12	
196	840816	16-234	1555	15	27	22	UP	OV	2	+3	05	
197	840816	16-234	1638	46	62	53	UP	MX	1	+3	04	
198	840816	16-234	1729	64	91	80	UP	OV	2	+4	04	
199	840817	16- 73	906	46	46	46	UP	BR	2	-5	03	8
200	840817	16- 73	1002	70	70	70	UP	BR	2	-4	13	8
201	840817	16- 73	1049	70	70	70	UP	MX	3	-3	13	8
202	840817	16- 73	1117	22	31	27	UP	OV	3	-2	13	
203	840817	16- 73	1200	26	26	26	UP	MX	3	-1	12	
204	840817	16-223	1309	18	24	21	UP	BR	2	+0	16	
205	840817	16-223	1400	18	24	21	UP	BR	2	+0	16	
206	840817	16-223	1436	46	46	46	UP	BR	2	+1	16	
207	840817	16-223	1502	46	46	46	UP	BR	2	+1	06	
208	840817	16-223	1525	73	73	73	UP	BR	2	+2	06	
209	840817	16-223	1640	22	31	27	UP	BR	2	+3	06	
210	840818	16-210	849	9	27	18	UP	MX	1	+6	14	
211	840818	16-216	1023	27	27	27	UP	MX	2	+6	12	
212	840818	16-216	1132	46	46	46	UP	BR	2	-5	03	1
213	840818	16-216	1230	20	20	20	UP	BR	2	-4	12	
214	840820	15-139	1728	33	33	33	UP	BR	1	-1	15	
215	840820	15-139	1818	64	40	55	UP	BR	1	+0	15	
216	840820	15-139	1900	64	40	55	UP	BR	1	+0	15	
217	840821	15-121	828	27	35	28	UP	BR	1	+1	11	7
218	840821	15-121	850	27	15	20	UP	BR	2	+1	11	

Table 8a (cont'd)

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
219	840821	15-121	933	48	48	48	UP	BR	2	+2	01	
220	840821	15-121	955	82	82	82	UP	BR	2	+3	03	
221	840821	15-121	1035	82	82	82	UP	BR	2	+3	03	
222	840821	15-121	1100	51	62	57	UP	BR	2	+3	12	
223	840821	15-105	1154	38	27	33	UP	BR	2	+3	16	
224	840821	15-105	1256	60	46	55	UP	BR	2	+4	03	
225	840821	15-105	1341	59	59	59	UP	BR	1	+4	03	
226	840821	15- 39	1518	18	18	18	UP	OV	2	+5	01	
227	840822	15- 39	838	22	22	22	UP	OV	2	+0	11	
228	840822	15- 39	925	46	46	46	UP	BR	2	+1	11	
229	840822	15- 6	1041	15	27	21	UP	BR	2	+2	03	
230	840822	15- 6	1108	46	46	46	UP	BR	1	+2	03	
231	840822	15- 6	1308	73	73	73	UP	BR	2	+3	13	
232	840822	15- 27	1433	15	27	21	UP	BR	2	+4	12	
233	840822	15- 27	1535	51	64	57	UP	BR	3	+5	13	8
234	840823	15- 56	850	9	18	18	UP	OV	2	+0	03	
235	840823	15- 56	1006	37	64	51	UP	OV	2	+1	03	
236	840823	15- 56	1110	64	64	64	UP	MX	1	+1	03	1
237	840823	15- 56	1145	64	64	64	UP	BR	1	+2	03	
238	840823	15- 33	1243	64	79	71	UP	BR	2	+3	03	
239	840823	15- 33	1335	9	27	18	UP	OV	1	+3	06	
240	840823	15- 33	1455	51	51	51	UP	OV	2	+4	03	
241	840824	15- 60	834	18	9	13	UP	OV	2	-2	06	
242	840824	15- 60	918	51	59	55	UP	MX	1	-1	03	1
243	840824	15- 60	1015	46	62	55	UP	OV	1	+0	04	
244	840824	15- 88	1723	9	27	18	UP	OV	1	+6		
245	840825	15-103	935	46	46	46	UP	BR	2	+6		8
246	840825	15-103	955	5	27	18	UP	BR	2	+6		8
247	840825	15-103	1130	18	18	18	UP	BR	2	+6		8
248	840825	15-103	1154	46	46	46	UP	BR	2	-5		8

Table 8b. Cruise 3, results from jigging with angling gear. Columns are set number, lure type, number of lines in the water, number of fish caught, duration (h), and counts for each species. DF dogfish, Squalus acanthias; RF ratfish, Hydrolagus colliei; CH chinook salmon, Oncorhynchus tshawytscha; SG silvergrey rockfish, Sebastes brevispinus; CO copper rockfish, S. caurinus; GS greenstriped rockfish, S. elongatus; QB quillback rockfish, S. maliger; TI tiger rockfish, S. nigrocinctus; YE yelloweye rockfish, S. ruberrimus; KG kelp greenling, Hexagrammos decagammus; LC lingcod, Ophiodon elongatus; BS butter sole, Isopsetta isolepis; RS rock sole, Lepidopsetta bilineata.

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
179	HER	3	5	2.65	1	0	0	0	1	0	0	0	0	0	2	1	0
180	HER	3	1	0.50	1	0	0	0	0	0	0	0	0	0	0	0	0
181	HER	3	3	1.00	1	0	0	0	1	0	0	0	0	0	1	0	0
182	HER	1	2	0.50	0	0	0	0	0	0	1	0	1	0	0	0	0
183	SIL	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
184	SIL	1	3	0.40	0	0	0	0	1	0	0	0	0	0	2	0	0
184	HER	1	3	0.40	0	0	0	0	1	0	2	0	0	0	0	0	0
185	HER	1	9	0.58	0	0	0	0	8	0	0	0	0	0	1	0	0
186	SIL	1	2	0.20	0	0	0	0	0	0	0	0	0	0	2	0	0
186	HER	1	1	0.20	0	0	0	0	0	0	0	0	1	0	0	0	0
187	SIL	1	3	0.56	0	0	0	0	0	0	1	0	1	0	1	0	0
187	HER	1	3	0.56	0	0	0	0	0	0	2	0	1	0	0	0	0
188	HER	1	7	1.20	1	0	1	0	0	0	2	0	2	0	1	0	0
189	SIL	1	3	0.40	0	0	0	0	0	0	3	0	0	0	0	0	0
189	HER	1	3	0.40	0	0	0	1	0	0	1	0	1	0	0	0	0
190	SIL	1	3	0.41	0	0	0	0	0	0	2	0	0	0	1	0	0
190	HER	1	1	0.41	0	0	0	0	0	0	1	0	0	0	0	0	0
191	SIL	1	3	0.83	0	0	0	3	0	0	0	0	0	0	0	0	0
191	HER	1	3	0.83	0	0	0	0	0	0	0	0	3	0	0	0	0
192	HER	1	5	1.18	0	0	0	0	0	0	3	0	2	0	0	0	0
193	SIL	1	2	0.34	0	0	0	0	0	0	1	0	1	0	0	0	0
193	HER	1	1	0.34	0	0	0	0	0	0	0	0	1	0	0	0	0
194	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
194	HER	2	1	0.67	0	0	0	0	1	0	0	0	0	0	0	0	0
195	SIL	2	0	0.57	0	0	0	0	0	0	0	0	0	0	0	0	0
195	HER	1	1	0.28	1	0	0	0	0	0	0	0	0	0	0	0	0
196	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
196	HER	2	6	0.67	0	0	0	0	0	0	3	0	0	0	3	0	0
197	SIL	1	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0
197	HER	2	5	1.17	0	0	0	0	0	0	3	0	1	0	1	0	0
198	SIL	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
198	HER	2	5	1.00	0	0	0	0	0	0	4	0	1	0	0	0	0
199	SIL	1	0	0.70	0	0	0	0	0	0	0	0	0	0	0	0	0
199	HER	2	1	1.40	0	0	0	0	0	0	0	0	1	0	0	0	0
200	HER	3	6	2.35	2	0	0	0	0	0	2	0	1	0	1	0	0
201	HER	3	2	2.65	0	0	0	0	0	0	2	0	0	0	0	0	0
202	HER	3	6	1.60	0	0	0	0	1	0	1	0	0	0	4	0	0
203	HER	3	2	1.25	0	0	0	0	0	0	0	0	0	0	2	0	0
204	HER	3	4	1.60	0	0	0	0	1	0	0	0	0	0	3	0	0

Table 8b (cont'd)

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
205	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
205	HER	2	2	0.50	1	0	0	0	0	0	0	0	0	0	1	0	0
206	SIL	1	2	0.23	0	0	0	0	0	0	0	0	1	0	0	0	1
206	HER	2	3	0.47	0	0	0	0	0	0	1	0	1	0	1	0	0
207	SIL	1	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
207	HER	2	0	0.60	0	0	0	0	0	0	0	0	0	0	0	0	0
208	HER	3	5	2.50	0	0	0	0	0	0	3	0	2	0	0	0	0
209	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
209	HER	2	1	0.33	0	0	0	0	0	0	1	0	0	0	0	0	0
210	SIL	2	0	1.10	0	0	0	0	0	0	0	0	0	0	0	0	0
210	HER	1	1	0.55	0	0	0	0	0	0	0	0	0	0	1	0	0
211	SIL	1	0	0.70	0	0	0	0	0	0	0	0	0	0	0	0	0
211	HER	2	1	1.40	0	0	0	0	0	0	0	0	1	0	0	0	0
212	SIL	1	0	0.83	0	0	0	0	0	0	0	0	0	0	0	0	0
212	HER	2	5	1.67	0	0	0	0	0	1	2	0	2	0	0	0	0
213	SIL	1	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
213	HER	2	1	0.53	1	0	0	0	0	0	0	0	0	0	0	0	0
214	HER	3	2	0.60	0	0	0	0	0	0	1	0	0	0	1	0	0
215	HER	3	6	1.45	0	0	0	0	0	0	3	0	2	0	1	0	0
216	HER	3	4	0.40	0	0	0	0	0	0	3	0	1	0	0	0	0
217	SIL	1	3	0.35	0	0	0	0	0	0	2	0	0	0	1	0	0
217	HER	2	3	0.70	0	0	0	0	0	0	2	0	1	0	0	0	0
218	SIL	2	3	1.57	0	0	0	0	0	0	1	0	0	0	2	0	0
218	HER	1	1	0.78	0	0	0	0	0	0	0	0	0	0	1	0	0
219	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
219	HER	2	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
220	SIL	1	1	0.50	0	0	0	0	0	1	0	0	0	0	0	0	0
220	HER	2	5	1.00	2	0	0	0	0	0	1	0	1	0	1	0	0
221	SIL	1	1	0.25	0	0	0	0	0	0	1	0	0	0	0	0	0
221	HER	2	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
222	SIL	1	0	0.33	0	0	0	0	0	0	0	0	0	0	0	0	0
222	HER	2	0	0.67	0	0	0	0	0	0	0	0	0	0	0	0	0
223	SIL	1	2	0.83	0	0	0	0	0	0	0	1	1	0	0	0	0
223	HER	2	2	1.67	0	0	0	0	0	0	1	0	1	0	0	0	0
224	SIL	1	3	0.68	0	0	0	0	0	0	1	0	1	0	1	0	0
224	HER	2	3	1.37	0	0	0	0	0	1	2	0	0	0	0	0	0
225	SIL	1	2	0.58	0	0	0	0	0	0	0	0	2	0	0	0	0
225	HER	2	2	1.17	1	0	0	0	0	0	0	0	1	0	0	0	0
226	SIL	2	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0
226	HER	1	1	0.50	0	0	0	0	0	0	1	0	0	0	0	0	0
227	HER	3	1	1.70	0	0	0	0	0	0	1	0	0	0	0	0	0
228	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
228	HER	2	1	0.50	1	0	0	0	0	0	0	0	0	0	0	0	0
229	SIL	1	0	0.68	0	0	0	0	0	0	0	0	0	0	0	0	0
229	HER	2	2	1.37	1	0	0	0	0	0	0	0	0	0	1	0	0
230	SIL	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 8b (cont'd)

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
205	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
230	HER	2	1	1.00	0	0	0	0	0	0	0	0	1	0	0	0	0
231	SIL	1	0	0.92	0	0	0	0	0	0	0	0	0	0	0	0	0
231	HER	2	3	1.83	0	0	0	0	0	0	1	0	1	0	1	0	0
232	SIL	1	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0
232	HER	2	1	1.17	0	0	0	0	0	0	1	0	0	0	0	0	0
233	SIL	1	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
233	HER	2	1	1.00	0	0	0	0	0	0	1	0	0	0	0	0	0
234	SIL	1	8	0.83	0	0	0	0	0	0	2	0	4	1	1	0	0
234	HER	2	3	1.67	0	0	0	0	0	0	1	0	0	0	2	0	0
235	SIL	1	3	0.92	0	0	0	0	0	1	2	0	0	0	0	0	0
235	HER	2	6	1.83	0	0	0	0	0	1	1	0	3	0	1	0	0
236	SIL	1	2	0.48	0	0	0	0	0	0	0	0	2	0	0	0	0
236	HER	2	4	0.97	0	0	0	0	0	0	1	0	3	0	0	0	0
237	SIL	1	1	0.33	0	0	0	0	0	0	0	0	1	0	0	0	0
237	HER	2	7	0.67	0	0	0	0	0	0	1	0	6	0	0	0	0
238	SIL	1	3	0.73	0	0	0	0	0	0	1	0	2	0	0	0	0
238	HER	2	3	1.47	2	0	0	0	0	0	0	0	1	0	0	0	0
239	SIL	1	1	0.73	1	0	0	0	0	0	0	0	0	0	0	0	0
239	HER	2	5	1.47	3	0	0	0	0	0	1	0	0	0	1	0	0
240	SIL	1	0	0.58	0	0	0	0	0	0	0	0	0	0	0	0	0
240	HER	2	6	1.17	3	0	0	0	0	1	0	0	2	0	0	0	0
241	SIL	1	0	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0
241	HER	2	2	0.83	0	0	0	0	0	0	2	0	0	0	0	0	0
242	SIL	1	1	0.80	0	0	0	0	0	0	0	0	1	0	0	0	0
242	HER	2	5	1.60	0	0	0	0	0	0	5	0	0	0	0	0	0
243	SIL	1	1	0.28	0	0	0	0	0	0	0	0	0	0	1	0	0
243	HER	2	5	0.57	0	0	0	0	0	0	5	0	0	0	0	0	0
244	SIL	1	3	1.53	0	0	0	0	2	0	0	0	0	0	1	0	0
244	HER	1	12	1.53	1	0	0	0	9	0	1	0	1	0	0	0	0
245	SIL	1	0	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0
245	HER	1	1	0.09	0	0	0	0	0	0	0	0	1	0	0	0	0
246	SIL	1	3	1.00	0	0	0	0	1	0	0	0	1	1	0	0	0
246	HER	1	6	1.00	0	0	0	0	2	0	3	0	1	0	0	0	0
247	HER	2	3	0.50	0	0	0	0	1	0	0	0	0	0	2	0	0
248	HER	2	5	2.00	0	0	0	0	0	0	2	0	2	0	1	0	0

Table 9a. Cruises 4 and 5, results from jigging with angling gear. Columns are set number, date (year month day), site number, start time, start or minimum depth, finish or maximum depth, median depth, anchor position (UP, up; DN, down), sun conditions (BR, bright; OV, overcast; MX, mixed), sea conditions, tide code, sounder information, and remarks.

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
219	840821	15-121	933	48	48	48	UP	BR	2	+2	01	
249	841002	15- 6	905	27	37	32	UP	OV	1	+2	10	
250	841002	15- 6	922	37	37	37	UP	OV	1	+2		
251	841002	15- 6	1000	73	84	78	UP	OV	1	+3		
252	841002	15- 6	1055	24	27	26	UP	OV	1	+3		
253	841002	15- 27	1235	18	27	22	DN	OV	1	+5		
254	841002	15- 27	1350	37	64	50	UP	OV	1	+6		
255	841002	15- 27	1425	73	86	80	UP	OV	1	+6	10	
256	841003	15- 56	1338	37	27	22	UP	OV	2	+5		
257	841003	15- 56	1420	37	44	40	UP	OV	2	+6		
258	841003	15- 56	1503	68	91	76	UP	OV	2	+6		
259	841003	15- 56	1550	77	73	75	UP	OV	2	+6		
260	841004	15- 60	1055	27	27	27	DN	MX	4	+2		8
261	841004	15- 60	1125	18	9	13	DN	OV	4	+3		8
262	841004	15- 60	1200	18	37	27	UP	OV	2	+3		8
263	841004	15- 60	1218	46	55	50	UP	OV	2	+3		8
264	841004	15- 60	1233	64	73	68	UP	MX	2	+3		8
265	841004	15- 60	1427	27	38	33	UP	OV	4	+5		8
266	841005	15-103	1000	9	16	13	DN	OV	2	+1		8
267	841005	15-103	1023	31	49	40	UP	OV	2	+1		2
268	841005	15-103	1044	73	66	69	UP	OV	4	+1		2
269	841005	15-121	1300	13	27	20	UP	OV	2	+3		8
270	841005	15-121	1330	46	37	40	DN	OV	4	+4		8
271	841006	16-216	1310	18	31	24	UP	OV	4	+3		1
272	841006	16-216	1340	55	55	55	UP	OV	4	+3		2
273	841006	16-223	1445	18	11	14	UP	OV	4	+4		8
274	841006	16-223	1507	46	55	50	UP	OV	4	+4		8
275	841006	16-223	1557	88	73	80	UP	OV	4	+5		8
276	841007	16-166	1007	20	31	25	UP	OV	3	-1		
277	841007	16-166	1036	31	64	45	UP	OV	3	+0		2
278	841007	16-166	1047	73	91	82	UP	OV	4	+0		2
279	841008	16-166	845	82	91	86	UP	OV	2	-3		
280	841008	16-166	903	22	7	15	UP	OV	2	-2		1
281	841008	16-166	915	55	64	60	UP	OV	2	-2		2
282	841008	16-166	937	33	33	33	UP	OV	2	-2		
283	841120	16-234	940	13	17	15	UP	OV	2	+1		8
284	841120	16-234	1020	29	55	42	UP	OV	2	+1		8
285	841120	16-234	1050	13	22	17	UP	OV	2	+2		8
286	841120	16- 73	1240	17	22	20	UP	MX	3	+3		8

Table 9a (cont'd)

SET	DATE Y M D	SITE	TIME	SDEP (m)	FDEP (m)	MDEP (m)	ANC	SUN	SEA	TID	SND	RK
287	841120	16- 73	1315	40	55	48	UP	BR	5	+4		8
288	841120	16- 73	1345	66	70	68	UP	BR	4	+5		8
289	841121	16-102	915	15	11	13	UP	MX	3	+0		8
290	841121	16-102	950	40	48	44	UP	OV	3	+0		8
291	841121	16-102	1030	66	82	74	UP	OV	3	+1		8
292	841121	16-113	1230	26	15	20	UP	OV	4	+3		8

Table 9b. Cruises 4 and 5, results from jigging with angling gear. Columns are set number, lure type, number of lines in the water, number of fish caught, duration (h), and counts for each species. DF dogfish, Squalus acanthias; RF ratfish, Hydrolagus colliei; CH chinook salmon, Oncorhynchus tshawytscha; SG silvergrey rockfish, Sebastes brevispinus; CO copper rockfish, S. caurinus; GS greenstriped rockfish, S. elongatus; QB quillback rockfish, S. maliger; TI tiger rockfish, S. nigrocinctus; YE yelloweye rockfish, S. ruberrimus; KG kelp greenling, Hexagrammos decagammus; LC lingcod, Ophiodon elongatus; BS butter sole, Isopsetta isolepis; RS rock sole, Lepidopsetta bilineata.

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
205	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
249	HER	2	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
250	HER	2	1	0.93	0	0	0	0	0	0	0	0	1	0	0	0	0
251	HER	2	3	1.33	0	0	0	0	0	0	1	0	2	0	0	0	0
252	HER	2	2	0.67	1	0	0	0	0	0	0	0	1	0	0	0	0
253	SIL	1	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0
253	HER	1	1	1.00	0	0	0	0	0	0	0	0	0	1	0	0	0
254	SIL	1	0	0.34	0	0	0	0	0	0	0	0	0	0	0	0	0
254	HER	1	1	0.34	0	0	0	0	0	0	1	0	0	0	0	0	0
255	SIL	1	0	0.75	0	0	0	0	0	0	0	0	0	0	0	0	0
255	HER	1	2	0.75	0	0	0	0	0	0	0	0	2	0	0	0	0
256	SIL	1	1	0.63	0	0	0	0	0	0	0	0	0	0	1	0	0
256	HER	1	1	0.63	0	0	0	0	0	0	0	0	0	0	1	0	0
257	SIL	1	2	0.60	0	0	0	0	0	0	2	0	0	0	0	0	0
257	HER	1	1	0.60	0	0	0	0	0	0	1	0	0	0	0	0	0
258	SIL	1	0	0.62	0	0	0	0	0	0	0	0	0	0	0	0	0
258	HER	1	0	0.62	0	0	0	0	0	0	0	0	0	0	0	0	0
259	SIL	1	0	0.34	0	0	0	0	0	0	0	0	0	0	0	0	0
259	HER	1	0	0.34	0	0	0	0	0	0	0	0	0	0	0	0	0
260	HER	1	1	0.33	0	0	0	0	0	0	0	0	0	0	1	0	0
261	SIL	1	1	0.34	0	0	0	0	1	0	0	0	0	0	0	0	0
261	HER	1	1	0.34	0	0	0	0	1	0	0	0	0	0	0	0	0
262	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
262	HER	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
263	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
263	HER	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
264	SIL	1	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
264	HER	1	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
265	SIL	1	0	0.34	0	0	0	0	0	0	0	0	0	0	0	0	0
265	HER	1	1	0.34	1	0	0	0	0	0	0	0	0	0	0	0	0
266	SIL	1	0	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0
266	HER	1	1	0.30	0	0	0	0	0	0	0	0	0	0	1	0	0
267	SIL	1	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
267	HER	1	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0	0
268	SIL	1	0	0.26	0	0	0	0	0	0	0	0	0	0	0	0	0
268	HER	1	0	0.26	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 9b (cont'd)

SET	LUR	NL	NF	DUR	SPECIES: DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS
269	SIL	1	0	0.47	0	0	0	0	0	0	0	0	0	0	0	0	0
269	HER	1	0	0.47	0	0	0	0	0	0	0	0	0	0	0	0	0
270	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
270	HER	1	1	0.17	1	0	0	0	0	0	0	0	0	0	0	0	0
271	HER	2	0	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0
272	SIL	1	0	0.23	0	0	0	0	0	0	0	0	0	0	0	0	0
272	HER	1	0	0.23	0	0	0	0	0	0	0	0	0	0	0	0	0
273	SIL	1	0	0.31	0	0	0	0	0	0	0	0	0	0	0	0	0
273	HER	1	0	0.31	0	0	0	0	0	0	0	0	0	0	0	0	0
274	SIL	1	0	0.54	0	0	0	0	0	0	0	0	0	0	0	0	0
274	HER	1	3	0.54	3	0	0	0	0	0	0	0	0	0	0	0	0
275	SIL	1	0	0.55	0	0	0	0	0	0	0	0	0	0	0	0	0
275	HER	1	0	0.55	0	0	0	0	0	0	0	0	0	0	0	0	0
276	SIL	1	0	0.44	0	0	0	0	0	0	0	0	0	0	0	0	0
276	HER	1	0	0.44	0	0	0	0	0	0	0	0	0	0	0	0	0
277	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
277	HER	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
278	SIL	1	0	0.44	0	0	0	0	0	0	0	0	0	0	0	0	0
278	HER	1	1	0.44	0	0	0	0	0	0	1	0	0	0	0	0	0
279	SIL	1	0	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0
279	HER	2	1	0.50	1	0	0	0	0	0	0	0	0	0	0	0	0
280	SIL	1	0	0.19	0	0	0	0	0	0	0	0	0	0	0	0	0
280	HER	1	1	0.19	0	0	0	0	0	0	0	0	0	0	1	0	0
281	SIL	1	0	0.27	0	0	0	0	0	0	0	0	0	0	0	0	0
281	HER	2	2	0.53	1	0	0	0	0	0	1	0	0	0	0	0	0
282	SIL	1	0	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
282	HER	2	1	0.33	0	0	0	0	0	0	1	0	0	0	0	0	0
283	HER	2	1	0.83	0	0	0	0	0	0	0	0	0	0	1	0	0
284	HER	2	2	0.67	0	0	0	0	0	0	2	0	0	0	0	0	0
285	HER	2	0	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0
286	HER	2	1	0.83	0	0	0	0	0	0	0	0	0	0	0	0	1
287	HER	2	1	0.67	0	0	0	0	0	0	0	0	0	0	1	0	0
288	HER	2	2	0.83	0	0	0	0	0	0	1	0	1	0	0	0	0
289	HER	2	3	0.83	0	0	0	0	1	0	0	0	0	1	1	0	0
290	HER	2	2	1.00	0	0	0	0	0	0	1	0	1	0	0	0	0
291	HER	2	1	0.67	0	0	0	0	0	0	1	0	0	0	0	0	0
292	HER	2	0	0.83	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 10. Date, site number, depth stratum, fishing mode, sex, fork length (mm), maturity code and fish number for landed catch. Data are sorted by species, sex, fishing mode and length. Fishing mode includes automated jig (AUT) and jigging (JIG) and casting (CAS) with angling gear for cruise 1, and jigging using stingsilda (SIL) and herring (HER) for cruises 2-5. Depths are listed as "1" < 40 m, "2" 40-70 m and "3" > 70 m. A fish number indicates that otoliths (rockfish) or fin rays (lingcod) were collected.

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
a) silvergrey rockfish							
840815	16-102	2	HER	F	477	3	502
840815	16-102	3	SIL	F	557	3	501
840815	16-102	3	SIL	M	432	7	504
840815	16-102	3	SIL	M	443	7	503
b) copper rockfish							
840802	16-201	1	HER		227	1	53
840730	16-201	1	SIL		211	1	39
840709	15- 89	1	AUT	F	310	7	24821
840709	15- 89	1	AUT	F	380	7	24822
840707	15- 33	1	CAS	F	177	7	24814
840707	15- 39	1	CAS	F	191	1	24807
840708	15- 33	1	CAS	F	199	1	24816
840707	15- 33	1	CAS	F	225	7	24813
840708	15- 33	1	CAS	F	242	7	24809
840707	15- 33	1	CAS	F	244	7	24812
840707	15- 39	1	CAS	F	245	7	24806
840707	15- 33	1	CAS	F	267	7	24811
840708	15- 33	1	CAS	F	276	7	24818
840707	15- 39	1	CAS	F	305	3	24805
840727	16-141	1	HER	F	183	7	13
840815	16-102	1	HER	F	216	1	64
840802	16-201	1	HER	F	223	7	47
840824	15- 88	1	HER	F	225	1	84
840802	16-201	1	HER	F	247	7	52
840729	16-242	1	HER	F	248	7	21
840802	16-201	1	HER	F	256	7	51
840815	16-102	1	HER	F	259	7	70
840815	16-102	1	HER	F	261	7	71
840731	16-201	1	HER	F	262	7	42
840825	15-103	1	HER	F	268	1	88
840730	16-201	1	HER	F	271	7	35
840729	16-227	1	HER	F	274	7	23
840802	16-201	1	HER	F	276	7	48
840824	15- 88	1	HER	F	278	3	81
841121	16-102	1	HER	F	280	3	1281
840815	16-102	1	HER	F	291	2	65
840727	16-141	1	HER	F	295	7	10
840824	15- 88	1	HER	F	295	3	77
840825	15-103	1	HER	F	299	3	89
840817	16-223	1	HER	F	304	3	74
840815	16-102	1	HER	F	306	7	67

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
b) copper rockfish							
840728	16-242	1	HER	F	308	7	20
840824	15- 88	1	HER	F	313	3	78
840727	16-141	1	HER	F	314	7	7
840730	16-227	1	HER	F	316	7	33
840730	16-227	1	HER	F	319	7	31
840824	15- 88	1	HER	F	320	3	75
840727	16-141	1	HER	F	324	7	4
840730	16-227	1	HER	F	325	7	30
840730	16-227	1	HER	F	343	7	27
840814	16-113	1	HER	F	349	3	61
840730	16-227	1	HER	F	352	7	29
840728	16-242	1	HER	F	357	7	18
840728	16-242	1	HER	F	378	7	19
840707	15- 33	1	JIG	F	177	7	24814
840707	15- 33	1	JIG	F	225	7	24813
840707	15- 33	1	JIG	F	244	7	24812
840707	15- 33	1	JIG	F	267	7	24811
840730	16-201	1	SIL	F	119	1	40
840824	15- 88	1	SIL	F	215	1	86
840825	15-103	1	SIL	F	221	1	87
840727	16-141	1	SIL	F	229	7	9
840727	16-141	1	SIL	F	245	7	11
840729	16-234	1	SIL	F	258	1	26
840730	16-201	1	SIL	F	263	7	38
840727	16-141	1	SIL	F	270	7	16
841004	15- 60	1	SIL	F	271	4	901
840727	16-141	1	SIL	F	281	7	14
840727	16-141	1	SIL	F	284	7	8
840709	15- 89	1	AUT	M	262	7	24823
840708	15- 33	1	AUT	M	264	7	24817
840709	15- 89	1	AUT	M	313	7	24824
840707	15- 27	1	CAS	M	210	1	24803
840708	15- 33	1	CAS	M	210	1	24819
840707	15- 27	1	CAS	M	211	1	24804
840708	15- 33	1	CAS	M	226	7	24810
840815	16-113	1	HER	M	216	1	63
840731	16-201	1	HER	M	219	7	43
840801	16-234	1	HER	M	243	1	44
840730	16-201	1	HER	M	246	7	37
840815	16-102	1	HER	M	250	7	69
841004	15- 60	1	HER	M	253	2	902
840730	16-201	1	HER	M	259	2	36
840824	15- 88	1	HER	M	260	1	82
840814	16-113	1	HER	M	262	2	62
840802	16-201	1	HER	M	264	2	50

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
b) copper rockfish							
840727	16-141	1	HER	M	267	7	5
840815	16-102	1	HER	M	270	7	66
840815	16-102	1	HER	M	275	7	68
840724	16-132	1	HER	M	278	7	2
840802	16-201	1	HER	M	278	7	49
840824	15- 88	1	HER	M	285	2	83
840728	16-242	1	HER	M	288	7	17
840824	15- 88	1	HER	M	291	2	79
840801	16-234	1	HER	M	292	2	45
840802	16-201	1	HER	M	294	7	46
840730	16-227	1	HER	M	319	7	34
840729	16-227	1	HER	M	320	7	24
840824	15- 88	1	HER	M	322	2	76
840729	16-227	1	HER	M	325	7	25
840730	16-227	1	HER	M	335	7	32
840729	16-242	1	HER	M	352	7	22
840730	16-227	1	HER	M	367	7	28
840817	16- 73	1	HER	M	375	7	73
840825	15-103	1	HER	M	396	7	86
840727	16-141	1	SIL	M	226	7	6
840727	16-141	1	SIL	M	227	7	15
840724	16-132	1	SIL	M	247	7	1
840730	16-201	1	SIL	M	250	2	41
840824	15- 88	1	SIL	M	262	2	85
840815	16-102	1	SIL	M	278	7	72
840727	16-141	1	SIL	M	296	7	12
840724	16-124	1	SIL	M	300	7	3
c) greenstriped rockfish							
840818	16-216	2	HER	F	158	1	100
840823	15- 6	3	AUT	M	234	7	
840823	15- 33	2	HER	M	211	2	105
840821	15- 56	2	HER	M	233	2	103
840823	15-105	2	HER	M	285	7	101
840821	15- 56	2	SIL	M	167	1	104
840707	15-121	3	SIL	M	286	7	102
d) quillback rockfish							
840818	16-216	2	HER	F	218	7	199
840823	15- 56	1	HER	F	243	2	429
840815	16-102	1	HER	F	267	1	178
841120	16-234	2	HER	F	271	2	1208
840815	16-102	2	HER	F	277	7	177
840815	16-102	2	HER	F	316	2	162
840815	16-102	3	HER	F	321	7	172

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
d) quillback rockfish							
840815	16-102	1	HER	F	322	7	175
840815	16-102	2	HER	F	323	2	165
840821	15-121	1	HER	F	325	3	419
840731	16-234	1	HER	F	327	2	207
840822	15- 39	1	HER	F	328	3	422
841008	16-166	1	HER	F	328	3	608
840801	16-234	1	HER	F	329	7	210
840731	16-234	1	HER	F	330	7	206
840815	16-102	3	HER	F	331	7	173
840816	16-234	3	HER	F	332	3	183
840818	16-216	2	HER	F	336	3	401
840822	15- 27	2	HER	F	336	2	421
841121	16-102	3	HER	F	337	3	1211
840731	16-234	1	HER	F	338	7	204
840817	16- 73	1	HER	F	339	3	193
840824	15- 60	2	HER	F	340	3	443
841008	16-166	2	HER	F	340	3	607
840816	16-234	2	HER	F	343	3	184
841003	15- 56	2	HER	F	347	3	603
840821	15-121	1	HER	F	350	3	420
840825	15-103	2	HER	F	351	3	451
841120	16- 73	3	HER	F	353	4	1210
840824	15- 60	2	HER	F	354	3	441
840816	16-234	2	HER	F	358	3	186
840824	15- 60	2	HER	F	358	3	438
840822	15- 6	3	HER	F	359	3	423
840820	15-139	2	HER	F	360	3	407
840824	15- 60	2	HER	F	360	3	444
840816	16-234	3	HER	F	363	7	181
840728	16-242	1	HER	F	364	7	200
840817	16-223	2	HER	F	365	3	198
840816	16-234	2	HER	F	368	3	185
840817	16- 73	3	HER	F	368	3	191
840728	16-242	1	HER	F	369	7	201
840824	15- 60	2	HER	F	371	3	442
840815	16-102	2	HER	F	374	3	161
840825	15-103	1	HER	F	374	3	449
840823	15- 56	3	HER	F	375	2	430
840821	15-105	2	HER	F	376	3	411
841007	16-166	3	HER	F	376	3	606
840820	15-139	1	HER	F	385	7	404
840825	15-103	2	HER	F	389	3	450
840820	15-139	2	HER	F	390	7	402
840821	15-121	3	HER	F	395	4	418
840825	15-103	1	HER	F	451	3	448

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
d) quillback rockfish							
840825	15-103	1	HER	F	459	3	447
840708	15- 33	2	JIG	F	174	1	24907
840709	15- 56	1	JIG	F	203	1	24911
840709	15- 56	1	JIG	F	224	1	24909
840823	15- 56	2	SIL	F	146	1	426
840730	16-201	1	SIL	F	300	7	203
840815	16-102	2	SIL	F	301	2	163
840815	16-102	2	SIL	F	308	2	167
840815	16-102	2	SIL	F	331	2	166
841003	15- 56	2	SIL	F	359	3	605
840815	16-102	3	SIL	F	362	7	170
841003	15- 56	2	SIL	F	383	3	604
840821	15-121	3	SIL	F	400	2	417
840704	16-102	1	AUT	M	278	7	24902
840704	16-102	1	AUT	M	292	7	24903
840704	16-113	2	AUT	M	315	7	24901
840704	16-102	1	AUT	M	328	7	24904
840706	15-105	2	AUT	M	334	7	24905
840821	15-105	1	HER	M	247	2	409
840823	15- 33	1	HER	M	258	2	434
840802	16-201	1	HER	M	272	7	212
840822	15- 27	1	HER	M	289	2	424
840801	16-234	1	HER	M	304	7	209
840816	16-234	1	HER	M	308	3	187
840820	15-139	2	HER	M	316	7	406
840824	15- 88	1	HER	M	320	2	446
840815	16-102	2	HER	M	321	7	168
840816	16-234	1	HER	M	322	7	188
841120	16-234	2	HER	M	325	2	1209
840821	15- 39	1	HER	M	328	3	413
840817	16-223	1	HER	M	330	3	194
840817	16-223	3	HER	M	332	3	197
840824	15- 60	2	HER	M	332	2	437
841002	15- 27	2	HER	M	335	7	601
840801	16-234	1	HER	M	338	7	211
840824	15- 60	2	HER	M	341	2	445
840801	16-234	1	HER	M	343	7	208
840731	16-234	1	HER	M	346	7	205
840815	16-102	1	HER	M	346	7	174
840815	16-102	2	HER	M	350	7	176
840817	16- 73	3	HER	M	350	3	190
840823	15- 56	2	HER	M	353	7	432
840817	16-223	3	HER	M	359	3	196
840824	15- 60	1	HER	M	360	7	435
840824	15- 60	2	HER	M	362	2	436

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
d) quillback rockfish							
840824	15- 60	2	HER	M	362	2	439
840730	16-227	1	HER	M	366	2	202
841121	16-102	2	HER	M	367	2	1212
840815	16-102	3	HER	M	375	7	171
840823	15- 56	3	HER	M	377	2	431
840824	15- 60	2	HER	M	378	2	440
840816	16-234	3	HER	M	380	2	182
840817	16-223	3	HER	M	380	7	195
840817	16- 73	3	HER	M	382	3	189
840820	15-139	2	HER	M	383	2	408
840821	15-105	2	HER	M	393	2	412
840817	16- 73	3	HER	M	395	7	192
841002	15- 6	3	HER	M	395	2	602
840820	15-139	2	HER	M	398	7	403
840816	16-234	3	HER	M	415	2	180
840820	15-139	2	HER	M	417	3	405
840709	15- 56	1	JIG	M	246	7	24910
840709	15- 56	1	JIG	M	255	1	24908
840815	16-102	2	SIL	M	206	1	164
840823	15- 56	2	SIL	M	206	1	427
840823	15- 56	1	SIL	M	221	2	425
840823	15- 56	1	SIL	M	278	2	428
840821	15-121	1	SIL	M	291	1	416
840823	15- 33	3	SIL	M	311	7	433
840821	15-105	2	SIL	M	341	2	410
840821	15-121	1	SIL	M	342	7	415
840815	16-102	2	SIL	M	362	7	169
840821	15-121	1	SIL	M	370	2	414
840815	16-102	2	SIL	M	381	7	179
e) tiger rockfish							
840708	15- 33	1	JIG	F	285	7	24900
840821	15-105	1	SIL	F	358	2	54
f) yelloweye rockfish							
840708	15- 33	1	AUT	F	231	1	25001
840708	15- 33	2	AUT	F	300	1	25004
840709	15- 56	1	AUT	F	351	7	25006
840709	15- 56	1	AUT	F	367	7	25007
840709	15- 56	1	AUT	F	401	7	25008
840707	15- 6	3	AUT	F	406	7	24883
840708	15- 60	3	AUT	F	413	7	25005
840708	15- 33	1	CAS	F	202	1	25003
840708	15- 33	1	CAS	F	234	1	25002
840825	15-103	1	HER	F	251	1	366

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
f) yelloweye rockfish							
840823	15- 56	3	HER	F	263	1	347
841002	15- 6	3	HER	F	264	2	803
840825	15-103	2	HER	F	285	1	367
840823	15- 56	3	HER	F	298	1	345
840815	16-102	3	HER	F	299	1	310
840821	15-105	3	HER	F	299	1	329
840815	16-102	1	HER	F	314	1	312
840823	15- 56	2	HER	F	323	1	348
840822	15- 6	2	HER	F	326	1	337
840815	16-102	3	HER	F	348	1	307
840821	15-105	1	HER	F	363	2	332
840818	16-216	2	HER	F	373	1	325
840816	16-234	2	HER	F	381	1	316
840817	16-223	3	HER	F	382	1	321
840825	15-103	2	HER	F	385	1	368
840820	15-139	2	HER	F	393	1	328
840815	16-102	3	HER	F	400	2	311
840818	16-216	2	HER	F	404	1	323
840731	16-201	1	HER	F	405	2	300
840817	16-223	2	HER	F	407	2	320
840823	15- 56	3	HER	F	408	3	340
841002	15- 27	3	HER	F	408	2	802
840815	16-102	2	HER	F	414	1	304
840825	15-103	2	HER	F	428	1	364
840816	16-234	3	HER	F	429	7	315
840823	15- 56	3	HER	F	429	2	356
840823	15- 56	3	HER	F	440	3	339
840823	15- 56	2	HER	F	499	1	350
841002	15- 6	2	HER	F	534	3	806
840815	16-102	3	HER	F	600	3	313
840823	15- 56	1	SIL	F	166	1	355
840823	15- 33	3	SIL	F	248	1	357
840823	15- 56	3	SIL	F	257	1	352
840825	15-103	1	SIL	F	312	1	365
840815	16-102	2	SIL	F	357	2	309
840823	15- 56	3	SIL	F	362	1	343
840817	16-223	2	SIL	F	382	1	319
840823	15- 56	1	SIL	F	471	2	351
840815	16-102	3	SIL	F	663	3	314
840710	15- 89	1	AUT	M	301	7	25009
840706	15-139	1	AUT	M	339	2	24882
840706	15-105	3	AUT	M	350	7	24881
840823	15- 33	2	HER	M	258	2	358
840823	15- 56	2	HER	M	285	1	344
841002	15- 6	1	HER	M	292	7	805

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
f) yelloweye rockfish							
840815	16-102	3	HER	M	294	7	303
840815	16-102	1	HER	M	313	7	306
840823	15- 33	2	HER	M	320	1	360
841002	15- 6	3	HER	M	326	2	804
840815	16-102	2	HER	M	327	7	301
840824	15- 88	1	HER	M	335	1	363
840823	15- 56	3	HER	M	342	1	341
840820	15-139	2	HER	M	354	2	327
841121	16-102	2	HER	M	354	1	1302
840817	16-223	3	HER	M	362	1	322
840823	15- 56	3	HER	M	364	2	349
840823	15- 56	3	HER	M	379	2	342
840815	16-102	2	HER	M	380	1	302
840818	16-216	1	HER	M	383	2	324
840820	15-139	2	HER	M	390	2	326
840815	16-102	3	HER	M	393	2	308
840815	16-102	2	HER	M	408	3	305
840821	15-121	3	HER	M	408	1	335
840817	16- 73	3	HER	M	420	7	318
840823	15- 56	3	HER	M	460	7	338
841002	15- 27	3	HER	M	524	7	801
840823	15- 33	3	HER	M	556	2	361
840817	16- 73	2	HER	M	587	7	317
840821	15-121	1	HER	M	605	2	336
840710	15- 89	1	JIG	M	301	7	25009
840823	15- 33	3	SIL	M	298	2	359
840821	15-105	3	SIL	M	304	2	330
840821	15-105	2	SIL	M	311	1	331
840823	15- 56	3	SIL	M	311	1	346
840824	15- 60	2	SIL	M	334	7	362
840821	15-105	1	SIL	M	350	2	333
840821	15-105	3	SIL	M	373	2	334
840823	15- 56	1	SIL	M	405	2	354
840823	15- 56	1	SIL	M	410	2	353
g) kelp greenling							
841121	16-102	1	HER	F	315	5	
841002	15- 27	1	HER	F	332		
840825	15-103	1	SIL	F	265		
840823	15- 56	1	SIL	F	335		
840802	16-201	1	HER	M	344		
h) lingcod							
840709	15- 97	1	AUT	F	350		
840704	16-113	1	AUT	F	372		

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
h) lingcod							
840815	16-234	1	HER	F	335	1	17504
841005	15-103	1	HER	F	337	2	17561
840730	16-201	1	HER	F	340		17569
840801	16-201	1	HER	F	366		17576
841120	16-234	1	HER	F	395	6	17581
840729	16-234	1	HER	F	399		
840728	16-242	1	HER	F	420		
840817	16-223	1	HER	F	420	2	17519
840816	16-234	1	HER	F	421		17506
840817	16- 73	1	HER	F	421		17512
840821	15-121	3	HER	F	432	3	17526
840729	16-227	1	HER	F	433		
840823	15- 56	1	HER	F	436	3	17531
840815	16-102	1	HER	F	441	1	17499
840801	16-234	1	HER	F	442		
841008	16-166	1	HER	F	443	3	17562
840802	16-201	1	HER	F	448		17579
840731	16-201	1	HER	F	454		
840801	16-234	1	HER	F	456		17574
840823	15- 33	1	HER	F	466	3	17535
840818	16-210	1	HER	F	468	2	17520
840728	16-242	1	HER	F	469		
840731	16-201	1	HER	F	480		17571
840728	16-242	1	HER	F	482		
840729	16-234	1	HER	F	482		
840817	16- 73	1	HER	F	483	3	17513
840822	15- 6	1	HER	F	488	3	17529
840728	16-242	1	HER	F	492		
840817	16- 73	1	HER	F	492	3	17509
840730	16-227	1	HER	F	510		17564
840730	16-227	1	HER	F	520		17567
840802	16-201	1	HER	F	552		17578
840728	16-242	1	HER	F	557		
840823	15- 56	1	HER	F	568	3	17533
840731	16-234	1	HER	F	569		17573
840825	15-103	2	HER	F	581	3	17540
840802	16-201	1	HER	F	685		17577
840708	15- 60	1	JIG	F	420		
840824	15- 88	1	SIL	F	364	2	17537
840815	16-102	1	SIL	F	421	3	17496
840815	16-102	2	SIL	F	421	3	17501
840815	16-102	1	SIL	F	424		17497
840730	16-201	1	SIL	F	452		17570
840821	15-121	1	SIL	F	500	3	17525
840821	15-121	1	SIL	F	545	3	17524

Table 10 (cont'd)

DATE	SITE	DEP	MOD	SEX	LEN	MAT	FISHNO
h) lingcod							
840815	16-102	1	SIL	F	583	3	17498
840825	15-103	1	HER	M	337	1	17538
840729	16-227	1	HER	M	373		
840814	16-113	1	HER	M	393		
840814	16-113	1	HER	M	418		17495
841121	16-102	1	HER	M	422	2	17582
841120	16- 73	2	HER	M	423	2	17580
841003	15- 56	1	HER	M	432	2	17563
840822	15- 6	3	HER	M	439	2	17530
840728	16-242	1	HER	M	451		
840816	16-234	1	HER	M	451	2	17505
840817	16- 73	1	HER	M	460	2	17511
840816	16-234	2	HER	M	464	3	17507
841004	15- 60	1	HER	M	464	2	17560
840825	15-103	1	HER	M	469	2	17539
840731	16-201	1	HER	M	486		17572
840730	16-227	1	HER	M	492		17565
840814	16-113	1	HER	M	492		17494
840817	16- 73	1	HER	M	492	2	17514
840730	16-227	1	HER	M	515		17568
840817	16-223	2	HER	M	520	2	17515
840821	15-121	1	HER	M	530	3	17528
840801	16-234	1	HER	M	548		17575
840815	16-102	2	HER	M	552	3	17500
840817	16-223	1	HER	M	557	3	17518
840820	15-139	2	HER	M	557	3	17521
840730	16-227	1	HER	M	584		17566
840817	16-223	1	HER	M	585	3	17516
840820	15-139	1	HER	M	622	3	17522
840817	16-223	1	HER	M	630	3	17517
840817	16- 73	3	HER	M	652	3	17508
840823	15- 56	2	HER	M	669	3	17532
840817	16- 73	1	HER	M	688	3	17510
840824	15- 60	2	SIL	M	424	2	17536
840815	16-102	1	SIL	M	439	3	17503
840821	15-105	2	SIL	M	452	2	17523
840821	15-121	1	SIL	M	462	2	17527
841003	15- 56	1	SIL	M	490	2	17559
840815	16-102	2	SIL	M	496	2	17502
840823	15- 56	1	SIL	M	513	3	17534
i) rock sole							
840705	16- 61	1	AUT	M	350		
841120	16- 73	1	HER	M	345		
840728	16-242	1	HER	M	388		

Table 11. A summary of CPUE data for each depth stratum, site, cruise and fishing mode. For a description of fishing modes and depths see Table 10. (TT, total time spent fishing; TF, total number of fish caught)

DEP	SITE	CR	MODE	TT(h)	TF	CPUE
1	15001	1	AUT	0.91	0	0.00
1	15006	1	AUT	0.48	0	0.00
1	15006	3	HER	1.37	2	1.46
1	15006	3	SIL	0.68	0	0.00
1	15006	4	HER	1.17	2	1.71
1	15027	1	AUT	0.65	0	0.00
1	15027	3	HER	1.17	1	0.85
1	15027	3	SIL	0.58	0	0.00
1	15027	4	HER	1.00	1	1.00
1	15027	4	SIL	1.00	0	0.00
1	15033	1	AUT	1.84	1	0.54
1	15033	3	HER	1.47	5	3.40
1	15033	3	SIL	0.73	1	1.37
1	15039	1	AUT	1.30	0	0.00
1	15039	3	HER	2.20	2	0.91
1	15039	3	SIL	1.00	0	0.00
1	15056	1	AUT	0.95	3	3.16
1	15056	3	HER	1.67	3	1.80
1	15056	3	SIL	0.83	8	9.64
1	15056	4	HER	0.63	1	1.59
1	15056	4	SIL	0.63	1	1.59
1	15060	1	AUT	0.28	0	0.00
1	15060	3	HER	0.83	2	2.41
1	15060	3	SIL	0.42	0	0.00
1	15060	4	HER	1.26	3	2.38
1	15060	4	SIL	0.93	1	1.08
1	15071	1	AUT	0.78	0	0.00
1	15088	3	HER	1.53	12	7.84
1	15088	3	SIL	1.53	3	1.96
1	15089	1	AUT	3.66	5	1.37
1	15097	1	AUT	0.58	1	1.72
1	15103	3	HER	1.50	9	6.00
1	15103	3	SIL	1.00	3	3.00
1	15103	4	HER	0.30	1	3.33
1	15103	4	SIL	0.30	0	0.00
1	15105	1	AUT	0.78	0	0.00
1	15105	3	HER	1.67	2	1.20
1	15105	3	SIL	0.83	2	2.41
1	15121	1	AUT	0.73	0	0.00

Table 11 (cont'd)

DEP	SITE	CR	MODE	TT(h)	TF	CPUE
1	15121	3	HER	1.48	4	2.70
1	15121	3	SIL	1.92	6	3.13
1	15121	4	HER	0.47	0	0.00
1	15121	4	SIL	0.47	0	0.00
1	15139	1	AUT	0.43	1	2.33
1	15139	3	HER	0.60	2	3.33
1	16015	1	AUT	0.58	0	0.00
1	16061	1	AUT	0.33	1	3.03
1	16073	3	HER	2.85	8	2.81
1	16073	4	HER	0.83	1	1.20
1	16078	1	AUT	0.97	1	1.03
1	16102	1	AUT	0.73	2	2.74
1	16102	3	HER	1.68	15	8.93
1	16102	3	SIL	1.10	5	4.55
1	16102	4	HER	0.83	3	3.61
1	16113	1	AUT	1.52	2	1.32
1	16113	3	HER	5.10	11	2.16
1	16113	3	SIL	0.90	0	0.00
1	16113	4	HER	0.83	0	0.00
1	16124	2	HER	2.37	0	0.00
1	16124	2	SIL	2.76	1	0.36
1	16132	2	HER	1.88	1	0.53
1	16132	2	SIL	2.73	1	0.37
1	16141	2	HER	2.52	5	1.98
1	16141	2	SIL	2.52	8	3.17
1	16144	2	HER	1.97	0	0.00
1	16144	2	SIL	0.98	0	0.00
1	16166	4	HER	0.96	2	2.08
1	16166	4	SIL	0.80	0	0.00
1	16201	2	HER	13.74	26	1.89
1	16201	2	SIL	2.75	6	2.18
1	16210	3	HER	0.55	1	1.82
1	16210	3	SIL	1.10	0	0.00
1	16216	3	HER	1.93	2	1.04
1	16216	3	SIL	0.97	0	0.00
1	16216	4	HER	0.90	0	0.00
1	16223	3	HER	2.43	7	2.88
1	16223	3	SIL	0.42	0	0.00
1	16223	4	HER	0.31	0	0.00
1	16223	4	SIL	0.31	0	0.00
1	16227	2	HER	5.99	24	4.01
1	16227	2	SIL	2.29	0	0.00
1	16234	2	HER	11.55	18	1.56
1	16234	2	SIL	1.95	1	0.51
1	16234	3	HER	0.67	6	8.96

Table 11 (cont'd)

DEP	SITE	CR	MODE	TT(h)	TF	CPUE
1	16234	3	SIL	0.33	0	0.00
1	16234	4	HER	1.33	1	0.75
1	16242	2	HER	6.19	18	2.91
1	16242	2	SIL	0.57	0	0.00
2	15001	1	AUT	0.78	0	0.00
2	15006	3	HER	1.00	1	1.00
2	15006	3	SIL	0.50	0	0.00
2	15006	4	HER	0.93	1	1.08
2	15027	1	AUT	0.63	0	0.00
2	15027	3	HER	1.00	1	1.00
2	15027	3	SIL	0.50	0	0.00
2	15027	4	HER	0.34	1	2.94
2	15027	4	SIL	0.34	0	0.00
2	15033	1	AUT	1.76	2	1.14
2	15033	3	HER	1.17	6	5.13
2	15033	3	SIL	0.58	0	0.00
2	15039	1	AUT	0.64	1	1.56
2	15039	3	HER	0.50	1	2.00
2	15039	3	SIL	0.25	0	0.00
2	15056	3	HER	1.83	6	3.28
2	15056	3	SIL	0.92	3	3.26
2	15056	4	HER	0.60	1	1.67
2	15056	4	SIL	0.60	2	3.33
2	15060	1	AUT	0.73	0	0.00
2	15060	3	HER	2.17	10	4.61
2	15060	3	SIL	1.08	2	1.85
2	15060	4	HER	0.25	0	0.00
2	15060	4	SIL	0.25	0	0.00
2	15089	1	AUT	1.53	0	0.00
2	15103	3	HER	2.00	5	2.50
2	15103	4	HER	0.28	0	0.00
2	15103	4	SIL	0.28	0	0.00
2	15105	1	AUT	0.30	0	0.00
2	15105	3	HER	1.37	3	2.19
2	15105	3	SIL	0.68	3	4.41
2	15121	1	AUT	0.50	0	0.00
2	15121	3	HER	1.00	0	0.00
2	15121	3	SIL	0.50	0	0.00
2	15121	4	HER	0.17	1	5.88
2	15121	4	SIL	0.17	0	0.00
2	15139	3	HER	1.85	10	5.41
2	16015	1	AUT	0.68	0	0.00
2	16036	1	AUT	0.62	0	0.00
2	16073	3	HER	1.40	1	0.71
2	16073	3	SIL	0.70	0	0.00

Table 11 (cont'd)

DEP	SITE	CR	MODE	TT(h)	TF	CPUE
2	16073	4	HER	0.67	1	1.49
2	16078	1	AUT	0.33	0	0.00
2	16102	1	AUT	0.28	0	0.00
2	16102	3	HER	2.57	14	5.45
2	16102	3	SIL	1.37	9	6.57
2	16102	4	HER	1.00	2	2.00
2	16113	1	AUT	0.68	1	1.47
2	16166	4	HER	0.70	2	2.86
2	16166	4	SIL	0.44	0	0.00
2	16216	3	HER	1.67	5	2.99
2	16216	3	SIL	0.83	0	0.00
2	16216	4	HER	0.23	0	0.00
2	16216	4	SIL	0.23	0	0.00
2	16223	3	HER	1.07	3	2.80
2	16223	3	SIL	0.53	2	3.77
2	16223	4	HER	0.54	3	5.56
2	16223	4	SIL	0.54	0	0.00
2	16234	3	HER	1.17	5	4.27
2	16234	3	SIL	0.58	0	0.00
2	16234	4	HER	0.67	2	2.99
3	15006	1	AUT	0.62	2	3.23
3	15006	3	HER	1.83	3	1.64
3	15006	3	SIL	0.92	0	0.00
3	15006	4	HER	1.33	3	2.26
3	15027	4	HER	0.75	2	2.67
3	15027	4	SIL	0.75	0	0.00
3	15033	1	AUT	0.93	1	1.08
3	15033	3	HER	1.47	3	2.04
3	15033	3	SIL	0.73	3	4.11
3	15056	1	AUT	0.61	0	0.00
3	15056	3	HER	1.64	11	6.71
3	15056	3	SIL	0.81	3	3.70
3	15056	4	HER	0.96	0	0.00
3	15056	4	SIL	0.96	0	0.00
3	15060	1	AUT	0.55	0	0.00
3	15060	4	HER	0.28	0	0.00
3	15060	4	SIL	0.28	0	0.00
3	15089	1	AUT	0.98	1	1.02
3	15103	4	HER	0.26	0	0.00
3	15103	4	SIL	0.26	0	0.00
3	15105	1	AUT	0.91	1	1.10
3	15105	3	HER	1.17	2	1.71
3	15105	3	SIL	0.58	2	3.45
3	15121	1	AUT	0.33	0	0.00
3	15121	3	HER	1.50	5	3.33

Table 11 (cont'd)

DEP	SITE	CR	MODE	TT(h)	TF	CPUE
3	15121	3	SIL	0.75	2	2.67
3	16073	3	HER	5.00	8	1.60
3	16073	4	HER	0.83	2	2.41
3	16102	3	HER	2.35	9	3.83
3	16102	3	SIL	1.17	5	4.27
3	16102	4	HER	0.67	1	1.49
3	16113	1	AUT	0.97	0	0.00
3	16166	4	HER	0.94	2	2.13
3	16166	4	SIL	0.69	0	0.00
3	16223	3	HER	2.50	5	2.00
3	16223	4	HER	0.55	0	0.00
3	16223	4	SIL	0.55	0	0.00
3	16234	3	HER	1.00	5	5.00
3	16234	3	SIL	0.50	0	0.00

Table 12. Species composition (%) summarized by depth stratum, statistical area, cruise number and fishing mode. For a description of fishing modes and depths, see Table 10. For a key to species, see Table 9b. Data are combined for cruises 4 and 5.

DEP	AR	CR	MOD	DF	RF	CH	SG	CO	GS	QB	TI	YE	KG	LC	BS	RS	N
1	15	1	AUT	0.0	0.0	0.0	0.0	41.7	0.0	0.0	0.0	50.0	0.0	9.1	0.0	0.0	12
1	15	1	CAS	0.0	0.0	0.0	0.0	86.4	0.0	4.5	0.0	9.1	0.0	0.0	0.0	0.0	22
1	15	1	JIG	0.0	0.0	0.0	0.0	36.4	0.0	36.4	9.1	9.1	0.0	9.0	0.0	0.0	11
1	15	3	HER	11.4	0.0	0.0	0.0	27.3	0.0	34.1	0.0	9.1	0.0	18.2	0.0	0.0	44
1	15	3	SIL	4.3	0.0	0.0	0.0	13.0	0.0	21.7	4.3	26.1	8.7	21.7	0.0	0.0	23
1	15	4	HER	25.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	12.5	12.5	37.5	0.0	0.0	8
1	15	4	SIL	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	2
1	16	1	AUT	0.0	0.0	0.0	0.0	14.3	0.0	42.9	0.0	0.0	0.0	28.6	0.0	14.3	7
1	16	2	HER	5.4	1.1	0.0	0.0	41.3	0.0	13.0	0.0	1.1	1.1	35.9	0.0	1.1	92
1	16	2	SIL	0.0	0.0	0.0	0.0	88.2	0.0	5.9	0.0	0.0	0.0	5.9	0.0	0.0	17
1	16	3	HER	12.0	0.0	0.0	0.0	28.0	0.0	16.0	0.0	6.0	0.0	36.0	2.0	0.0	50
1	16	3	SIL	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0	0.0	5
1	16	4	HER	0.0	0.0	0.0	0.0	14.3	0.0	14.3	0.0	0.0	14.3	42.9	0.0	14.3	7
2	15	1	AUT	33.0	0.0	0.0	0.0	0.0	0.0	33.0	0.0	33.0	0.0	0.0	0.0	0.0	3
2	15	1	JIG	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1
2	15	3	HER	9.1	0.0	0.0	0.0	0.0	6.8	50.0	0.0	27.3	0.0	6.8	0.0	0.0	44
2	15	3	SIL	0.0	0.0	0.0	0.0	0.0	12.5	37.5	0.0	25.0	0.0	25.0	0.0	0.0	8
2	15	4	HER	25.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	25.0	0.0	0.0	0.0	0.0	4
2	15	4	SIL	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	2
2	16	1	AUT	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1
2	16	3	HER	3.6	0.0	3.6	3.6	0.0	3.6	42.9	0.0	32.1	0.0	10.7	0.0	0.0	28
2	16	3	SIL	0.0	0.0	0.0	0.0	0.0	0.0	54.5	0.0	18.2	0.0	18.2	0.0	9.1	11
2	16	4	HER	40.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	10.0	0.0	10.0	0.0	0.0	10
3	15	1	AUT	33.3	0.0	0.0	0.0	0.0	16.7	0.0	0.0	50.0	0.0	0.0	0.0	0.0	6
3	15	3	HER	20.8	0.0	0.0	0.0	0.0	0.0	16.7	0.0	54.2	0.0	8.3	0.0	0.0	24
3	15	3	SIL	0.0	0.0	0.0	0.0	0.0	10.0	20.0	0.0	70.0	0.0	0.0	0.0	0.0	10
3	15	4	HER	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	80.0	0.0	0.0	0.0	0.0	5
3	16	3	HER	7.4	0.0	0.0	0.0	0.0	0.0	51.9	0.0	37.0	0.0	3.7	0.0	0.0	27
3	16	3	SIL	0.0	0.0	0.0	60.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0	0.0	0.0	5
3	16	4	HER	20.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	20.0	0.0	0.0	0.0	0.0	5

Table 13. The effect of lure type on species composition. Data are from <40 m from cruises 2 to 5. Analyses were performed on the raw data. Species were excluded if the expected frequency was less than 3. (DF dogfish, CO copper rockfish, QB quillback rockfish, LC lingcod).

	Species composition (frequency)				
Lure	DF	CO	QB	LC	N
HER	0.10	0.36	0.19	0.35	185
SIL	0.02	0.53	0.16	0.29	38
N	19	86	42	76	223

$\chi^2 = 4.79$, df = 3, $p>0.10$

Table 14. The effect of depth on species composition. Data were combined over lure types for cruises 2 to 5. Species were excluded if the expected frequency was less than 3. (DF dogfish, CO copper rockfish, QB quillback rockfish, YE yelloweye rockfish, LC lingcod).

	Species composition (%)					
Depth	DF	CO	QB	YE	LC	N
<40 m	8.0	36.1	17.7	6.3	31.0	238
40-70 m	10.1	0.0	51.5	27.3	11.1	99
>70 m	11.1	0.0	34.7	50.0	4.2	72
N	37	86	118	78	90	409

$\chi^2 = 177$, df = 8, $p<0.001$

Table 15. The effect of statistical area on species composition. Data were combined over lure types for cruises 2 to 5. Species with expected frequencies of less than 3 were excluded from the analysis. (DF dogfish, CO copper rockfish, QB quillback rockfish, YE yelloweye rockfish, LC lingcod).

a) < 40 m

Statistical area	Species composition (%)				
	DF	CO	QB	LC	N
15	12.9	27.4	32.3	27.4	62
16	6.8	42.8	13.7	36.7	161
N	19	86	42	76	223

$\chi^2 = 14.0$, df = 3, $p<0.01$

b) 40-70 m

Statistical area	Species composition (%)		
	QB	YE	N
15	65.9	34.1	44
16	64.7	35.3	34
N	51	27	78

$\chi^2 = 0.01$, df = 1, $p>0.10$

c) >70 m

Statistical area	Species composition (%)		
	QB	YE	N
15	22.6	77.4	31
16	60.0	40.0	30
N	25	36	61

$\chi^2 = 8.83$, df = 1, $p<0.01$

Table 16. The effect of vessel on species composition in the <40 m depth stratum. Data were combined over lure types for cruises 2 to 5. Species with expected frequencies less than 3 were excluded from the analysis. Separate analyses were performed on each statistical area. Data from the herring skiff, inflatable and whaler were combined into an "other" category. (DF dogfish, CO copper rockfish, QB quillback rockfish, LC lingcod).

a) Statistical area 15

	Species composition (%)				
Vessel	DF	CO	QB	LC	N
KETA	13.5	8.1	51.4	27.0	37
Other	12.0	56.0	4.0	28.0	25
N	8	17	20	17	62

$\chi^2 = 22.9$, df = 3, $p<0.001$

b) Statistical area 16

	Species composition (%)				
Vessel	DF	CO	QB	LC	N
KETA	11.8	29.4	15.7	43.1	51
Other	4.6	49.1	12.7	33.6	110
N	11	69	22	59	161

$\chi^2 = 6.89$, df = 3, $p<0.10$

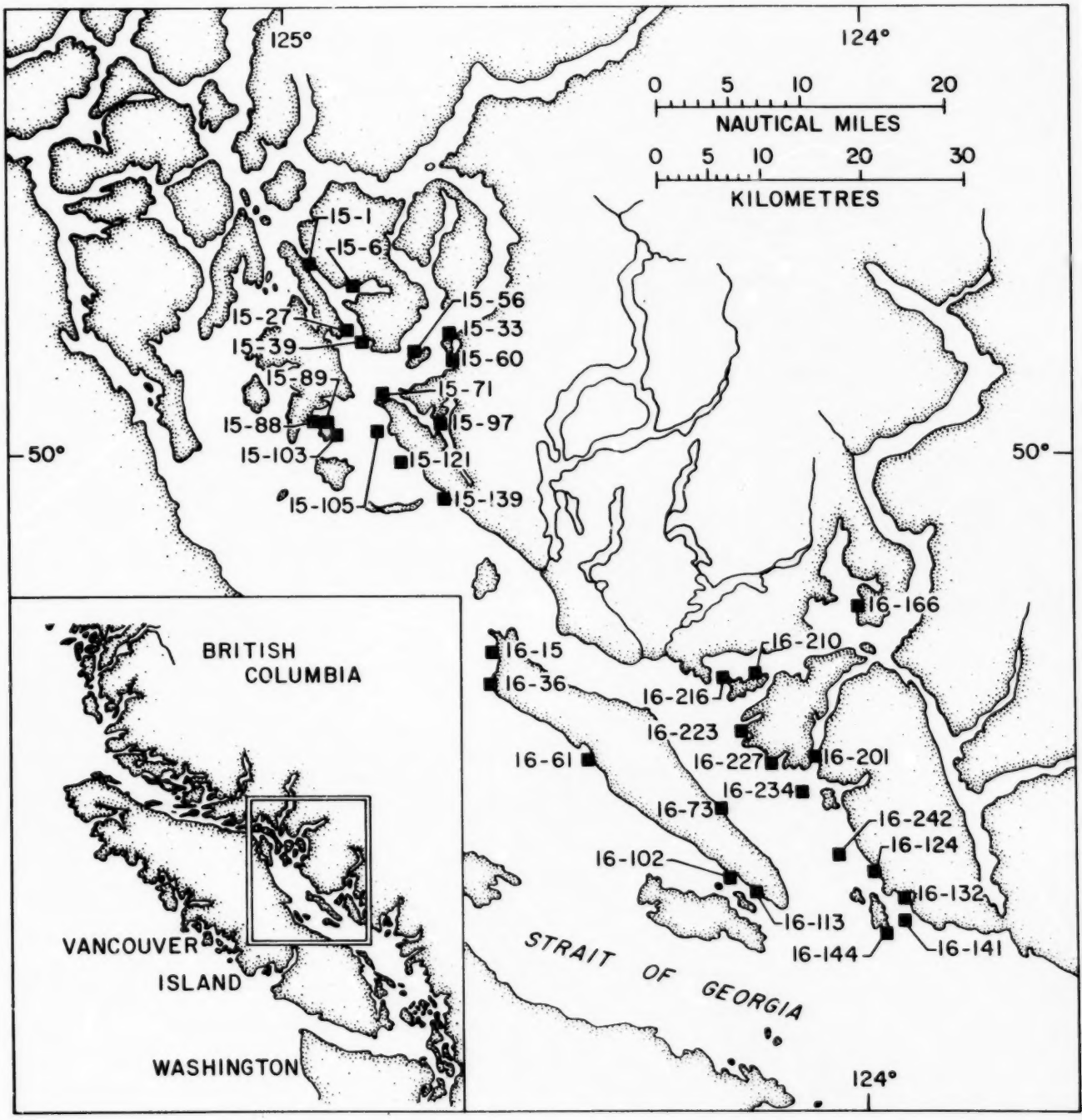

Fig. 1. Site numbers and locations in the Strait of Georgia, British Columbia.

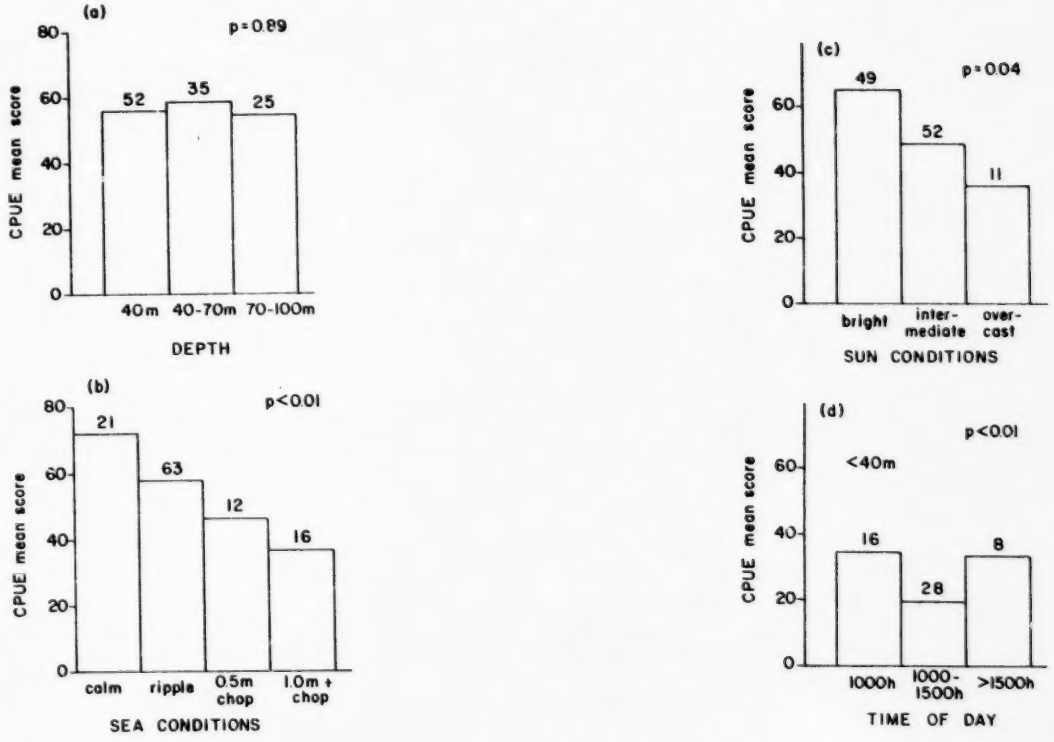

Fig. 2. CPUE mean score derived from Kruskal-Wallis tests on rockfish and lingcod CPUE using data from cruises 3-5. (a) test for the effect of depth (b) test for the effect of sea surface conditions (c) test for the effect of sun conditions (d) test for the effect of time of day. Numbers above the histograms refer to sample sizes in each group.

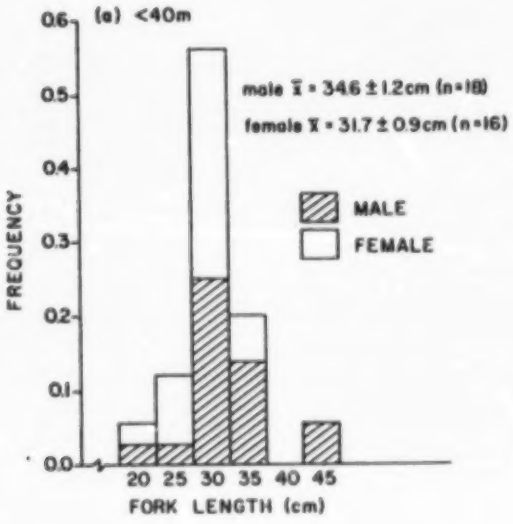

Fig. 3a

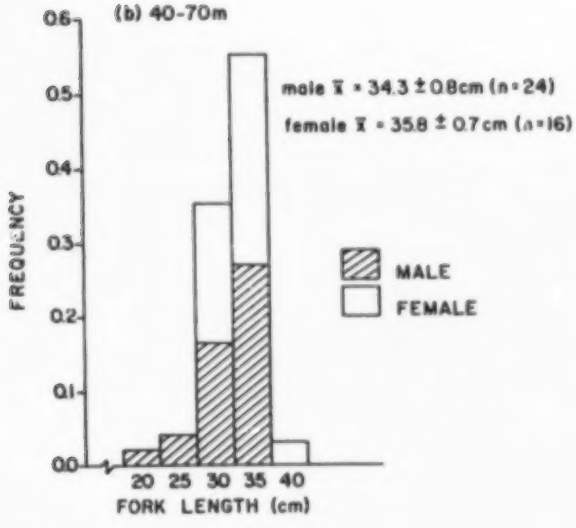

Fig. 3b

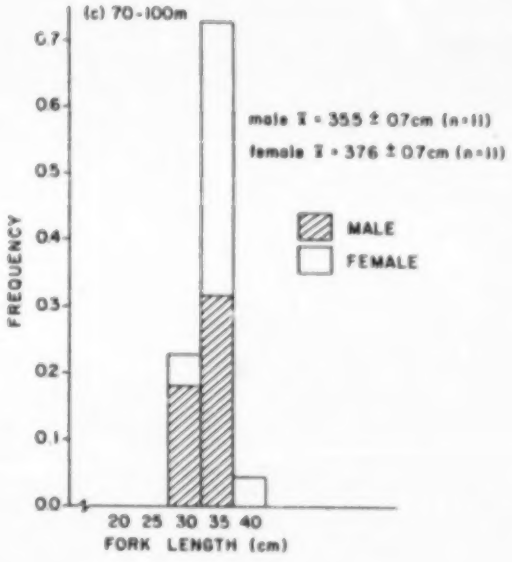

Fig. 3c

Fig. 3. Length-frequency distributions for quillback rockfish caught with herring on cruises 2-5. Mean lengths (± 1 S.E.) for each sex are given with sample sizes.

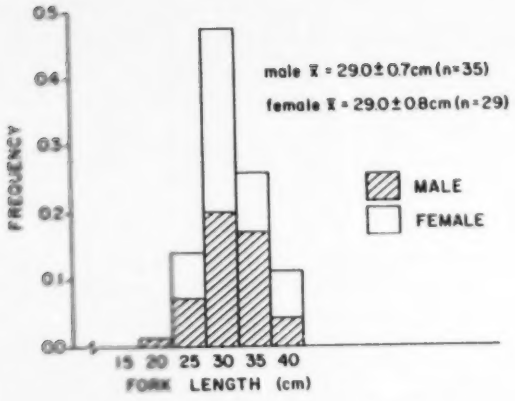

Fig. 4. Length-frequency distribution for copper rockfish caught with herring on cruises 2-5. Mean lengths (± 1 S.E.) for each sex are given with sample sizes.

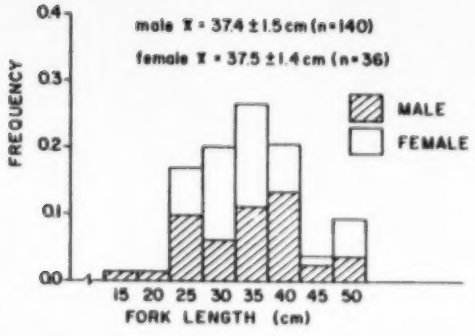

Fig. 5. Length-frequency distribution for yelloweye rockfish caught with herring and stingsilda on cruises 2-5. Data were combined across depth strata. Mean lenghts (+ 1 S.E.) for each sex are given with sample sizes.

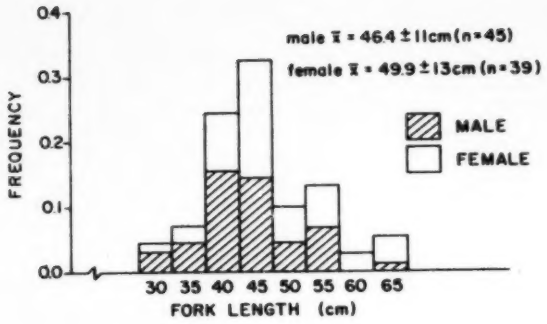

Fig. 6. Length-frequency of distribution for lingcod caught with herring and stingsilda on cruises 2-5. Data were combined across depth strata. Mean lengths (+ 1 S.E.) for each sex are given with sample sizes.